

Polychlorinated Biphenyl (PCB) Remediation Completion REPORT

Safety-Kleen Systems, Inc. November 2011

219303

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1. INTRODUCTION

This Polychlorinated Biphenyl (PCB) Remediation Completion Report has been prepared by Woodard & Curran (W&C) on behalf of Safety-Kleen Systems, Inc. (Safety-Kleen) to comply with the requirements set forth in the United States Environmental Protection Agency's (EPA) January 20, 2011 PCB Cleanup and Disposal Approval (Approval) granted under 40 CFR 761.61(a) for the subject work. The Approval is provided in **Appendix A** of this Report. This Report documents PCB remediation activities conducted at the Safety-Kleen Cranston facility (Site), located at 167 Mill Street in Cranston, Rhode Island. A Site Locus Map is included as **Figure 1**.

1.1 PROJECT BACKGROUND/CONCEPTUAL SITE MODEL

The Site has been used for various industrial purposes since at least the mid-1800s, including a dye works, printing and finishing company, and rubber tubing manufacturer. The Site has operated as a hazardous waste treatment, storage and disposal facility (TSDF) since approximately 1979. The portion of the Site subject to PCB remediation is comprised of an approximately 1,000 square foot grass and vegetation-covered area adjacent to Building M, which is located on the northeastern portion of the Site. A 250-square foot concrete pad is located between Building M and the PCB remediation area. The concrete pad was formerly suspected to be a transformer pad, but after further investigation it is now believed to have supported a dust collector related to rubber tubing manufacturing operations. PCB-containing materials were likely released in ambient dust generated from former Site operations and dispersed over the ground surface surrounding the dust collector over time. As such, shallow soil impacts were suspected in the vicinity of the concrete pad that formerly housed the dust collector.

Woodard & Curran (W&C) collected four shallow (grade to 2 feet below ground surface) soil samples adjacent to each side of the concrete pad in November 2007. Aroclor 1254 was detected in one of the soil samples above Rhode Island Department of Environmental Management (RIDEM) Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations) Industrial/Commercial Direct Exposure Criteria (I/CDEC) of 10 mg/kg. A Hazardous Material Release Notification Form was submitted to RIDEM in December 2007 that included the PCB exceedances and other exceedances of non-PCB constituents detected in different areas of the Site.

Additional soil characterization sampling was conducted in the vicinity of the PCB exceedance between May 2008 and September 2010 to delineate the extent of PCB-impacted soil in this area of the Site. W&C submitted a Self-Implementing On-Site Cleanup and Disposal Plan (SIP) to EPA in November 2010 that described the results of soil characterization activities and proposed activities to remediate PCB impacted soil. Upon receipt of USEPA comments to the initial SIP submittal, a revised SIP was submitted in January 2011. EPA granted an Approval of the revised SIP in January 2011.

1.2 SUBMITTALS AND PROJECT TIMELINE

The following list provides a summary of the major activities conducted and document submittals prepared as part of the remediation activities. It should be noted that characterization sampling described in the SIP submittal was conducted over several sampling events that occurred between November 2007 and September 2010.

- Self-Implementing On-Site Cleanup and Disposal Plan (SIP) November 3, 2010
- Response to EPA Comments dated December 8, 2011 December 20, 2011
- Response to EPA Comments emailed January 4, 2011 January 6, 2011
- PCB Cleanup and Disposal Approval under 40 CFR 761.61(a) and (c), issued by EPA January 20, 2011



- EPA Approval of Notifications, Certifications and Contractor Work Plan March 25, 2011
- PCB Remediation Activities Commenced June 8, 2011
- PCB Remediation Activities Completed August 19, 2011

1.3 REPORT OBJECTIVES

This Report provides a description of the project activities as they were performed in accordance with the PCB Cleanup and Disposal Approval issued by EPA under 40 CFR 761.61(a) on January 20, 2011. This Report is being submitted to meet the requirements pursuant to Recordkeeping and Reporting Condition 19 as described in EPA's January 20, 2011 Approval.



2. REMEDIAL ACTION IMPLEMENTATION

This section describes the PCB cleanup and disposal activities conducted at the Site under the Approval, consistent with the requirements of 40 CFR 761.61(a). Remediation activities began on June 8, 2011 and were completed on August 19, 2011. Activities were conducted in accordance with the Approval and related submittals listed in Section 1.3. A summary of activities including site preparation and controls, soil excavation and segregation, verification sample collection, and soil disposal are presented in the following sections.

2.1 SITE PREPARATIONS AND CONTROLS

Prior to initiating the soil excavation, site controls were implemented as described in Section 3.3 of the SIP and W&C's response to USEPA's comments dated December 8, 2010. These preparations included the development of a Health & Safety Plan, filing notices and certifications with EPA pursuant to Conditions 9 and 11 of the Approval (see **Appendix A**), Dig Safe marking and notification, installation of erosion and sedimentation controls downgradient from the proposed excavation area, and procurement of fencing materials and polyethylene sheeting to secure the proposed excavation area.

2.2 SOIL REMOVAL AND VERIFICATION SAMPLING

Soil excavation activities were conducted by United Industrial Services (UIS) of Meriden, Connecticut in June-August 2011. All ambient air monitoring and verification soil sampling activities were conducted by W&C. Soil excavation activities began on June 8, 2011.

2.2.1 Methods

W&C contacted DigSafe Systems, Inc. prior to excavation activities. Soil excavation areas were pre-marked by W&C prior to beginning excavation using paint and orange survey flags. UIS used a Takeuchi TB-135 mini hydraulic excavator to excavate PCB-impacted soil. Due to the location of the excavation area with respect to the Site building and adjacent property line and Pawtuxet River, roll-off containers were staged approximately 25 feet from the excavation area on an asphalt paved surface. Soils were live-loaded from the excavation area into a Bobcat S185 and transported into lined 30-cubic yard roll-off containers. The bucket of the Bobcat S185 was filled approximately half way to prevent spillage of excavated soil and the Bobcat remained outside of the extent of the excavation to prevent adherence of excavation soil to the treads of the Bobcat. The Bobcat was emptied over the roll-off container, and polyethylene sheeting was placed adjacent to the roll-off container to capture any loose soil that may have fallen from the bucket.

All soil excavation activities were conducted with one operator in the Takeuchi TB-135 and a second operator in the Bobcat S185. W&C misted soil with a hose as needed and verified that the extent of each excavation area was reached. Upon achieving proposed excavation depths, post-excavation soil samples were collected in accordance with a 40 CFR 761.280 (Subpart O) sampling plan as described in the SIP. Verification samples were collected from a depth of 0-3" at the base of the excavation area, and from the midpoint of the excavation sidewall from a 3" increment extending into the sidewall.

If initial verification sample results demonstrated that PCB concentrations exceeded the project action limit (PAL) of either ≥ 10 ppm or ≥ 50 ppm, additional soil excavation was conducted and additional verification sampling at an offset grid was performed until results confirmed that residual PCB levels were below PALs. All excavation equipment was decontaminated in accordance with the methodology described UIS' Work Plan prior to moving from ≥ 50 ppm PCB excavation areas to the ≥ 10 ppm and < 50 ppm PCB excavation areas, and all samples were collected using dedicated sampling equipment. Samples were transferred on ice to ESS Environmental Laboratory of Cranston,



Rhode Island, under standard chain-of-custody procedures. Samples were extracted using USEPA Method 3540C and analyzed using USEPA Method 8082. Electronic versions of the complete laboratory analytical reports are provided on CD in **Appendix B**.

2.2.2 Excavation Area

Cleanup and disposal of PCB-impacted soil was proposed over an estimated 1,000 square feet. Initial proposed excavation depths ranged from 0.5-2.0 feet below ground surface (bgs). Approximately 600 square feet of the proposed excavation area was previously delineated to contain soil impacted with PCBs \geq 50 ppm, and approximately 400 square feet of the proposed excavation area was previously delineated to contain soil impacted with PCBs \geq 10 ppm and < 50 ppm.

2.2.3 Excavation of PCB Remediation Waste ≥ 50 ppm

Portions of the excavation area containing soil with PCB concentrations \geq 50 ppm was previously delineated and depicted on Figure 4 of the SIP that was submitted to the USEPA. In accordance with W&C's January 6, 2011 emailed response to EPA's comments dated December 8, 2010, excavation of the \geq 50 ppm PCB-impacted soil and subsequent verification sampling was conducted prior to commencement of excavation of the \geq 10 ppm and < 50 ppm PCB-impacted soil in order to verify that all \geq 50 ppm soil was removed from the excavation area prior to excavation of the \geq 10 ppm and < 50 ppm PCB-impacted soil.

2.2.4 Excavation of PCB Remediation Waste ≥ 10 ppm and < 50 ppm

Results of the June 8 and June 9, 2011 excavation and verification sampling activities demonstrated that soil impacted with PCBs \geq 50 ppm was removed from a significant portion of the excavation area. Remaining \geq 50 ppm PCB impacted soil was present in localized areas in the north-northeastern portion of the excavation area. Portions of the excavation area previously delineated to contain concentrations of PCBs \geq 10 ppm and \leq 50 ppm that were located next to soil samples that contained PCBs \leq 50 ppm were inferred to contain concentrations of PCBs \leq 50 ppm and \geq 10 ppm. As such, excavation of these soils commenced on June 21, 2011. Soil generated from this portion of the excavation was segregated in a dedicated, lined roll-off container for disposal as non-hazardous waste.

2.3 EXCAVATION AND VERIFICATION SAMPLING ACTIVITIES

Excavation of PCB impacted soil and collection of verification samples commenced on June 8, 2011 and ended on August 5, 2011. Iterations of each sampling event are described in the following sections.

2.3.1 June 8 – June 9, 2011 ≥ 50 ppm PCB-Impacted Soil Excavation and Verification Sampling Activities

Excavation of ≥ 50 ppm PCB-impacted soil commenced on June 8, 2011. Soil excavated from this area was managed as hazardous waste in accordance with the SIP and segregated in a dedicated lined roll-off container as described in Section 2.2.1. Upon completion of soil excavation activities, 24 verification samples were collected from the excavation floor (VB-1 through VB-24) and 24 verification samples were collected from the excavation sidewalls (SW-1 through SW-24). Verification sample locations are depicted on **Figure 2**. Laboratory analytical results demonstrated that 8 of the sidewall samples contained concentrations of PCBs above PALs, and 3 of the excavation floor samples contained PCB concentrations above PALs.



Summary of PAL Exceedances: June 8 – June 9, 2011 Verification Samples

Sidewall Sample	PCB Concentration (ppm)
SW-1	236
SW-4	43.6
SW-8	1,920
SW-10	32.1
SW-11	29.3
SW-13	15.72
SW-14	183
SW-23	20.5
Excavation Floor Sample	PCB Concentration (ppm)
VB-2	23.3
VB-16	689
VB-17	177

Of these exceedances, four of the sidewall samples (SW-10, SW-11, SW-13 and SW-23) contained PCB concentrations \geq 10 ppm and < 50 ppm and were located adjacent to areas of the excavation that were previously delineated to contain concentrations of PCBs \geq 10 ppm and < 50 ppm . Additionally, excavation floor samples collected adjacent to VB-2 (VB-1, VB-3, VB-5, VB-6 and VB-7) contained PCBs in concentrations < 10 ppm. As such, remaining soil to be excavated from these areas was treated as \geq 10 ppm and < 50 ppm non-hazardous waste and is described further in Section 2.3.3.

Three sidewall samples (SW-1, SW-8 and SW-14) and two excavation floor samples (VB-16 and VB-17) contained concentrations of PCBs \geq 50 ppm. Sidewall samples SW-4 and SW-6, which were located adjacent to SW-1 and SW-8 but contained concentrations of PCBs \leq 50 ppm, were treated as \geq 50 ppm soil due to their close proximity to samples containing PCBs \geq 50 ppm. Excavation of these soils is described in Section 2.3.2.

2.3.2 June 17 – June 20, 2011 ≥ 50 ppm PCB-Impacted Soil Excavation and Verification Sampling Activities

On June 17 and June 20, 2011, eight sidewall samples (SW-25, SW-26, SW-27, SW-28, SW-29, SW-30, SW-31, SW-32) and six excavation floor samples (VB-25, VB-26, VB-27, VB-28, VB-16B and VB-17B) were collected from



the area containing ≥ 50 ppm soil remaining from the June 8 and June 9, 2011 excavation activities. Excavation sidewalls were extended 5' beyond the former edge of the excavation in the vicinity of SW-1, SW-4, SW-6 and SW-8. Soil was excavated to a depth of 0.5' below ground surface (bgs) near SW-1 and SW-4, and to a depth of 2' bgs near SW-6 and SW-8. Additional sidewall samples and excavation floor samples were collected from this portion of the excavation. An additional 6" lift of soil was excavated from the vicinity of VB-16 and VB-17 and new verification excavation floor samples were collected from 2' bgs from these areas (VB-16B and VB-17B). Verification sample locations are depicted on **Figure 3**. Because SW-14 was located directly beneath a chain-linked fence used to demarcate the property boundary, the excavation could not be extended an additional 5'. In this location, an additional 3" of soil was excavated along 5 linear feet on each side of SW-14 to a depth of 1.5' bgs and a new sidewall sample (SW-32) was collected.

All excavation floor samples collected during this sampling event were < 10 ppm. Four of the sidewall samples contained PCBs \geq 50 ppm (SW-25, SW-26, SW-28 and SW-29); and two of the sidewall samples contained PCBs \geq 10 ppm and < 50 ppm (SW-27 and SW-32).

Summary of PAL Exceedances: June 17 – June 20, 2011 Verification Samples

Sidewall Sample	PCB Concentration (ppm)
SW-25	70.8
SW-26	468
SW-27	27.2
SW-28	80.6
SW-29	126
SW-32	26.5

Because SW-27 was located in between two \geq 50 ppm soil samples, soil excavated from this location was managed as \geq 50 ppm PCB remediation waste. Excavation of these soils is described in Section 2.3.4. Laboratory analytical results for SW-32 (collected from the vicinity of SW-14) were \geq 10 ppm and < 50 ppm, requiring additional excavation in this area. The additional soil excavated from this area was managed as \geq 10 ppm and < 50 ppm non-hazardous waste and is described further in Section 2.3.5.

2.3.3 June 21, 2011 ≥ 10 ppm and < 50 ppm PCB-Impacted Soil Excavation and Verification Sampling Activities

On June 21, 2011, soils containing PCBs \geq 10 ppm and < 50 ppm were excavated. Based on the June 8 and June 9, 2011 laboratory analytical results, excavation sidewalls were extended in the vicinity of SW-10, SW-11 and SW-13 by extending the length of the excavation 5' beyond its former edge. Soil was excavated from this location to a depth of 1.5' bgs, consistent with the depth of adjacent \geq 50 ppm soil that was excavated during the June 8 and June 9



excavation activities. Two sidewall samples (SW-33 and SW-34) and two excavation floor samples (VB-29 and VB-30) were collected from these areas at locations depicted on **Figure 3**. Soil located in the vicinity of SW-23 was also excavated by extending the length of the excavation 5' beyond its former edge and collecting sidewall samples (SW-43, SW-44 and SW-50) and an excavation floor sample (VB-38) from a depth of 2' bgs, consistent with the depth of adjacent \geq 50 ppm soil, from locations depicted on **Figure 3**. Additionally, a 6" lift of soil was also excavated from the vicinity of VB-2, which contained PCBs \geq 10 ppm and < 50 ppm during the June 8 and June 9, 2011 sampling event, and another verification excavation floor sample was collected (VB-2B) from a depth of 1' bgs. Laboratory analytical results of these verification samples demonstrated soils containing concentrations of PCBs \geq 10 ppm were removed from the excavation area in these locations, with the exception of SW-44, which contained PCBs \geq 10 ppm and < 50 ppm.

Upon completion of the extended excavation areas, the previously delineated \geq 10 ppm and < 50 ppm excavation areas that were located adjacent to \geq 50 ppm excavation areas where < 50 ppm confirmatory sample results were achieved were excavated. Sidewall samples SW-35, SW-36, SW-37, SW-38, SW-39, SW-40, SW-41, SW-42, SW-45, SW-46, SW-47, SW-48 and SW-49 and excavation floor samples VB-34, VB-35, VB-36, VB-37, VB39, VB-40 and VB-41 were collected from these areas, resulting in a total of 18 sidewall samples and 14 excavation floor samples. Laboratory analytical results demonstrated that 7 of the sidewall samples contained concentrations of PCBs above PALs.

Summary of PAL Exceedances: June 20 – June 21, 2011 Verification Samples

Sidewall Sample	PCB Concentration (ppm)
SW-39	25.09
SW-40	30.9
SW-41	47.1
SW-42	13.98
SW-44	10.89
SW-45	110
SW-46	27.93

The vicinity of SW-45, which contained PCBs \geq 50 ppm, and SW-44 and SW-46, which were located adjacent to SW-45, was subsequently excavated and managed as \geq 50 ppm hazardous waste soil. Due to the close proximity of SW-25, which contained PCBs \geq 50 ppm, soil located in the vicinity of SW-40 and SW-41 was also managed as \geq 50 ppm hazardous waste soil. Excavation of soil from these locations is described further in Section 2.3.4.

Excavation of the ≥ 10 ppm but < 50 ppm soil remaining in the excavation area is described further below.



2.3.4 July 12 – July 15, 2011 ≥ 50 ppm Excavation and Verification Sampling Activities

Between July 12 and July 15, 2011, excavation sidewalls were extended 5' beyond the former excavation edge in the vicinity of SW-25, SW-26, SW-27, SW-28 and SW-29, and soil was excavated to 0.5' bgs. Two large oak trees were located within the vicinity of SW-25 and SW-26, so in these areas the excavation was extended to the extent practicable without damaging the roots of the trees and new sidewall samples were collected. The vicinity of the roots located in between SW-25 and SW-26 was hand dug with a shovel to the extent practicable without damaging the tree and a second sample was collected from this area (SW-25A). Sidewall and excavation floor samples were collected from other areas of the excavation at offset locations as shown on **Figure 4**. All soil excavated from this area was managed as ≥ 50 ppm PCB remediation waste.

Laboratory analytical results from soil samples collected during the June 21, 2011 sampling event (see Section 2.2.3) that were adjacent to SW-25 (SW-40 and SW-41) contained PCBs \geq 10 ppm and < 50 ppm. Due to the close proximity of these samples to SW-25 and SW-26, excavation sidewalls were also extended 5' beyond the former excavation edge in these areas and soil excavated from this location was also managed as \geq 50 ppm hazardous waste. The vicinity of SW-40 and SW-41 was located next to a large oak tree, so in this location the excavation was extended to the extent practicable without damaging the roots of the tree and a new sidewall sample was collected (SW-41A).

Seven sidewall samples (SW-25A, SW-41A, SW-51, SW-52, SW-53, SW-54 and SW-55) and 6 excavation floor samples (VB-42, VB-43, VB-44, VB-45, VB-46 and VB-47) were collected from the extended excavation area. Laboratory analytical results demonstrated one of the sidewall samples (SW-53) and four of the excavation floor samples (VB-42, VB-43, VB-44 and VB-46) contained PCBs \geq 10 ppm and < 50 ppm. As such, additional soil excavated from this area was managed as \geq 10 ppm and < 50 ppm soil and is described further in Section 2.3.6 Sidewall sample SW-25A contained PCBs \geq 50 ppm. Additional soil was excavated from this location during the excavation activities described in Section 2.3.7 and managed as hazardous waste.

Laboratory analytical results of verification sidewall samples collected on June 21, 2011 (see Section 2.2.4.1) also demonstrated concentration of PCBs \geq 50 ppm remained in the excavation area in the vicinity of SW-45. Soil samples collected from either side of this sidewall (SW-44 and SW-46) contained concentrations of PCBs \geq 10 ppm and < 50 ppm; however, due to the close proximity of SW-45 to these samples, additional soil excavated from these locations was managed as \geq 50 ppm soil. On July 12, 2011, soil located in the vicinity of SW-44, SW-45 and SW-46 was removed from the excavation area and managed as \geq 50 ppm PCB remediation waste. Because these three soil sample locations were located near the property boundary adjacent to a chain linked fence, an additional 3" of soil was excavated from the sidewall over an approximately 20 linear foot area and three representative sidewall samples were collected (SW-44A, SW-45A and SW-46A).

Summary of PAL Exceedances: July 12 – July 15, 2011 Verification Samples

Sidewall Sample	PCB Concentration (ppm)
SW-25A	112.9
SW-41A	48.6
SW-53	13.52



Excavation Floor Sample	PCB Concentration (ppm)
VB-42	17.02
VB-43	10.27
VB-44	14.83
VB-46	11.64

Laboratory analytical results of verification sidewall samples and verification excavation floor samples demonstrated soils containing concentrations of PCBs ≥ 50 ppm were removed from the excavation area, with the exception of residual soil located within the roots of the oak trees present within the excavation area (SW-25A). Additional excavation of these soils is described in Section 2.3.7.

2.3.5 July 15, 2011 ≥ 10 ppm and < 50 ppm PCB-Impacted Soil Excavation and Verification Sampling Activities

On July 15, 2011, remaining areas that contained PCBs ≥ 10 ppm and < 50 ppm from the June 21, 2011 excavation activities were excavated. Excavation sidewalls were extended 5' beyond the edge of the former excavation area to a depth of 1' bgs in the vicinity of SW-39 and SW-42 and sidewall samples and excavation floor samples were collected as shown on **Figure 4**. One sidewall sample was collected from the vicinity of the extended excavation near SW-39 (SW-39A) and 3 sidewall samples were collected from the vicinity of the extended excavation to the east of SW-39 and SW-42 (SW-56, SW-57 and SW-58). Three excavation floor samples were collected from the bottom of the excavation (VB-48, VB-49 and VB-50). Additionally, soil was collected from the sidewall in the vicinity of SW-32 (formerly SW-14), which was located directly beneath a chain-linked fence along the property boundary. In this location, an additional 3" of soil was excavated from the sidewall over a 10 linear foot area to a depth of 2' bgs and SW-32A was collected.

Summary of PAL Exceedances: July 15, 2011 Verification Samples

Sidewall Sample	PCB Concentration (ppm)
SW-56	20.17
SW-57	33.9

Laboratory analytical results demonstrated that two of the sidewall samples (SW-56 and SW-57) contained concentrations of PCBs \geq 10 ppm and < 50 ppm. Additional soil was excavated from these areas and is described in Section 2.3.6.



2.3.6 July 26 – July 27, 2011 ≥ 10 ppm and < 50 ppm PCB-Impacted Soil Excavation and Verification Sampling Activities

On July 26, 2011, excavation sidewalls were extended 5' beyond the former excavation edge in the vicinity of SW-53, SW-56 and SW-57 and three sidewall samples (SW-56A, SW-57A and SW-59) and six excavation floor samples were collected (VB-42A, VB-51, VB-52, VB-53, VB-54 and VB-55). An additional 6" lift of soil was excavated in the vicinity of VB-42, VB-43, VB-44 and VB-46 and new verification samples (VB-42A, VB-43A, VB-44A and VB-46A) were collected from these areas as shown on **Figure 5**.

VB-42A and VB-51 were collected from the vicinity of SW-59, confirming that a small quantity of soil impacted with PCBs ≥ 10 ppm and < 50 ppm remained in the excavation area. Excavation of these soils is described in Section 2.3.8.

2.3.7 July 27, 2011 ≥ 50 ppm PCB-Impacted Soil Excavation and Verification Sampling Activities

On July 27, 2011, residual soil located within the roots of the oak trees in the vicinity of SW-25A was hand dug with a shovel to the extent practicable without damaging the root structure. Because adequate soil could not be obtained from sidewalls due to the presence of roots and other organic material, verification bottom samples VB-52 and VB-53 were collected from the vicinity of SW-25A. Verification sample locations are depicted on **Figure 5**. Laboratory analytical results demonstrated that soil in this location of the excavation contained PCBs < 10 ppm. As such, all ≥ 50 ppm PCB impacted soil was removed from the excavation area.

Summary of PAL Exceedances: July 26 – July 27, 2011 Verification Samples

Sidewall Sample	PCB Concentration (ppm)
SW-59	19.11
Excavation Floor Sample	PCB Concentration (ppm)
VB-42A	10.947

2.3.8 August 5, 2011 ≥ 10 ppm and < 50 ppm PCB-Impacted Soil Excavation and Verification Sampling Activities

On August 5, 2011, excavation sidewalls were extended 5' beyond the former excavation edge in the vicinity of SW-59 and 2 sidewall samples (SW-59A and SW-59B) were collected. An additional 6" lift of soil was excavated in the vicinity of VB-42A and VB-51, and new verification samples were collected from these areas as shown on **Figure 6**. One sample, VB-42B, contained concentrations of PCBs above the PAL of 10 ppm. A statistical analysis performed in support of obtaining compliance with RIDEM criteria is described in Section 4.



2.3.9 Removal Summary

The initial set of verification data included 135 primary soil samples. Analytical results indicated that 96 of these samples contained PCBs at concentrations < 10 ppm. Additional soil removal was conducted at 39 locations exceeding the ≥ 10 ppm criteria, representing 29% of the soil removal areas.

The final depth of excavation did not exceed 24 inches bgs in any area of the Site. Approximately 12% of the area (190 ft²) was excavated to 6 inches bgs, 51% of the area (800 ft²) was excavated to 12 inches bgs, 7% of the area (115 ft²) was excavated to 18 inches bgs and 30% of the area (465 ft²) was excavated to 24 inches bgs. In addition, approximately 80% of the area (54 yd³) was removed as hazardous waste soil, and 20% of the area (14 yd³) was removed as non-hazardous waste soil. The removal depths and areas are depicted on **Figure 2** - **Figure 6**.

The volume of in-place soils excavated from the Site totaled 68 yd³ (14 yd³ non-hazardous waste, 54 yd³ hazardous waste). This number was calculated given the excavation area and known excavation depths in each area as shown on **Figure 2 - 6**. This 68 yd³ volume is 38.3% greater than the 42 yd³ estimated in the SIP because of the expanded removal area. Given the density of soils and slight volumetric expansion expected upon removal from the ground, this figure is consistent with the total weight of soils (108.33 tons) as measured at the disposal facilities. Refer to Section 2.4 for complete disposal documentation.

2.4 AIR MONITORING

Air monitoring was conducted in accordance with the perimeter air monitoring plan included as an attachment in UIS's Contractor Work Plan submitted to EPA on March 23, 2011. Either a Dustrak Model 8520 or a Dustrak II Model 8520 aerosol monitor was used to monitor ambient air quality in the excavation area. Due to the relatively small size and low occupancy status of the excavation area, one air monitor was used. The monitoring location was selected based on predominant wind direction during daily excavation activities in order to monitor air conditions in the breathing zone of potential receptors, which included Safety-Kleen, UIS and W&C employees. The air monitor was set up to record readings continuously during active removal activities, and readings were recorded at least once every hour.

There were no instances of visible dust generation from the soil removal area during any site activities, as soils that appeared dry on the ground were misted with water prior to removal and throughout the course of excavation activities. There were no exceedances of the total airborne particulate action limit (0.1 mg/m³ above background) during any site activities with the exception of one reading collected during excavation activities on July 12, 2011; however, as soil in the excavation had been misted with water throughout excavation activities, it is likely that this reading (0.128 mg/m³) was likely caused by exhaust fumes from the nearby excavator and not by dust from the excavation. Readings collected before and after the excavator moved from this portion of the excavation were below the action limit (0.077 mg/m³ and 0.097 mg/m³) were below the action limit; as such, no corrective actions were necessary.

2.5 STORAGE & DISPOSAL

Storage and disposal activities were completed in accordance with the procedures outlined in Section 3.6 of the SIP and W&C's response to EPA's comments dated December 20, 2010. All proposed and active excavation areas were secured by chain-link fencing on the northern side of the excavation and orange snow fencing around the remainder of the excavation area throughout the duration of the work activities. All soils and other PCB remediation wastes generated in association with removal activities (i.e. polyethylene sheeting, PPE) were placed in secure, lined, covered, and marked 20-cubic yard and 30-cubic yard roll-off waste containers that were kept within fence perimeters



while on-site. The PCB wastes were managed in accordance with 40 CFR 761.65 and labeled in accordance with 40 CFR 761.40.

Filled roll-off containers were transported off-site by UIS. Soils classified as hazardous waste (≥ 50 ppm PCBs) were transported under manifest to the Chemical Waste Management hazardous waste facility in Model City, New York. Soils classified as non-hazardous waste (< 50 ppm PCBs) were segregated for disposal and transported under bills of lading to the Turnkey Recycling and Environmental Enterprises (TREE) non-hazardous waste disposal facility in Rochester, New Hampshire. Six trucks (each carrying a single roll-off) delivered a total weight of 84.79 tons of hazardous waste soils to the Model City facility, and 2 trucks (each carrying a single roll-off) delivered a total weight of 23.54 tons of non-hazardous soils to the TREE facility. An overall weight of 108.33 tons of material was removed for off-site disposal, with the first load shipped on June 10, 2011 and the last load shipped on August 9, 2011.

Pursuant to Recordkeeping and Reporting Condition 19 of the Approval, copies of all waste shipment records including manifests, bills of lading, and certificates of disposal are provided in **Appendix C**.

2.6 SITE RESTORATION

Following completion of the removal activities and verification that the cleanup levels had been met, UIS backfilled all soil excavation areas with loam imported from Smithfield Peat Company, Inc. of Smithfield, Rhode Island. Prior to delivery, W&C submitted a sample of the loam to ESS Environmental Laboratory of Cranston, Rhode Island for analysis of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), priority pollutant metals (PP-13), barium, total cyanide, PCBs by 3540C extraction and 8082 analysis, pesticides, and total petroleum hydrocarbons (TPH). Laboratory analytical results were compared to RIDEM's Method 1 Residential Direct Exposure Criteria. No exceedances of the criteria were reported, confirming that the backfill material was acceptable for on-site use. Laboratory certificates of analysis generated from backfill soil samples are provided in **Appendix D**.

UIS dismantled the site controls (orange snow fencing surrounding the excavation perimeter) after the excavation was backfilled and compacted to surface grade with the excavator bucket. UIS then restored the ground surface to its original grass-covered condition. Backfilling was finished on August 19, 2011, signifying the official completion date of the excavation activities as the last shipment of waste material had already been removed from the Site.



3. DATA USABILITY ASSESSMENT

This data quality and data usability assessment reviews the results of the post-excavation soil verification samples collected from the Site by W&C personnel between June and August 2011. This precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) parameter evaluation includes an assessment of the parameters and QA/QC samples as they affect the usability of site sample results. These indicators have been examined in the context of the intended use of the data, and an overall assessment of site soil conditions.

Data validation was conducted internally by W&C personnel according to a modified Tier II validation procedure. This review included a completeness check of field documentation including sample collection and preservation methods, a completeness check of the laboratory data and documentation, a review of the internal laboratory QA/QC procedures and results including surrogate recoveries, matrix spike and matrix spike duplicate results, blank results, and laboratory control standard results, and an evaluation of sample holding times, trip blank results, and field duplicate results. The assessment was performed in general conformance with USEPA Region I Guidelines and the Quality Control Guidelines for the Acquisition. Data validation summary sheets are provided in **Appendix E**.

Sample extraction and analysis was performed by ESS Laboratory of Cranston, Rhode Island. All samples were extracted by USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs by USEPA Method 8082.

3.1 PRECISION

Field duplicate samples were collected at a frequency of 1 duplicate sample, 1 matrix spike sample, and 1 matrix spike duplicate sample per 20 primary samples during the verification sampling event.

A total of 7 duplicate, matrix spike, and matrix spike samples were collected to analyze the precision of the 135 primary verification sample results. Relative percent differences (RPDs) between the primary and associated duplicate samples were within acceptance criteria for all samples; no qualifications were applied to the data as a result of field duplicate sample results.

As a result of the data validation process, data qualifiers were attached to certain sample results to indicate that the concentration is estimated. Data was qualified with a "P" if the percent difference between primary and confirmation results exceeded 40%. Primary and confirmation results typically differ in soil analyses due to heterogeneities inherent to the sample matrix, and the laboratory reports the higher of the two confirmation results. A "P" qualifier was applied to 6 of 144 primary verification samples (VB-1, VB-11, VB-12, VB-44, VB-42A and VB-42B).

3.2 ACCURACY

Accuracy of the analytical data was assessed by reviewing recoveries for matrix spikes (MS), matrix spike duplicates (MSD), surrogates, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD). After review of this information, no qualifications were applied to the data as a result of MS/MSD, surrogate, or LCS/LCSD percent recoveries.

3.3 REPRESENTATIVENESS

Consistent procedures and laboratory analysis of the data were achieved. Sample containers were packed on ice and were accompanied by complete chain of custody forms from the time of sample collection until laboratory delivery. All samples were extracted and analyzed within the allowable holding time for the method. No analytes



were detected in the laboratory method blank analyses, indicating that there were no interferences introduced at the laboratory during sample analysis. Field equipment blank samples, collected at a frequency of one per twenty primary samples during this sampling event, were non-detect for all samples; no qualifications were applied to the data.

3.4 COMPLETENESS

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount of valid data expected. The data packages from ESS Laboratory were reviewed to ensure that all sample and associated quality assurance results were available. Results of the completeness review indicated that all collected samples were analyzed and all quality control results were available to complete the data validation process.

3.5 COMPARABILITY

Comparability measures the degree of confidence with which one data set can be compared to a related set of data. Based on a review of established standard methods and procedures for collection, analysis, and reporting of data, the data collected by W&C during this sampling event are considered to have met the requirements for comparability.

3.6 SENSITIVITY

Sensitivity was evaluated based on a review of the sample quantitation and reported quantitation limits. Laboratory reported detection limits typically met the site data quality objective (reporting limit ≤ 10 ppm), but sample dilutions due to elevated PCB concentrations did not make it possible to meet this objective for 11 of the 144 verification samples (SW-1, SW-4, SW-8, SW-14, SW-25, SW-26, SW-28, SW-29, VB-2, VB-16 and VB-17). In these instances, soils associated with these samples were subsequently excavated and resampled. Verification samples collected after additional soil removal at these four locations were all reported with detection limits below the 10 ppm PAL.

3.7 CONCLUSION

Based on a review of the analytical results with regard to the PARCCS parameters, this data quality / data usability assessment indicates that the data is of sufficient quality for use in rendering an opinion of soil conditions at the Site.



4. RIDEM STATISTICAL EVALUATION

As described in preceding sections of this report, the remedial activities conducted at the Site between June and August 2011 generated verification bottom samples representative of 55 locations and sidewall samples representative of 59 locations. Collection of verification and sidewall samples was conducted in an iterative process based on whether sample results contained concentrations of PCBs above cleanup levels, resulting in several rounds of excavation and confirmatory sample collection. Laboratory analytical results for all sidewall soil samples collected from the final lateral extent of excavation were below 10 mg/kg for each sample. Laboratory analytical results for all verification bottom samples collected from the final vertical extent of excavation were also below 10 mg/kg for each sample, with the exception of one verification bottom sample. This sample, VB-42B, contained concentrations of total PCBs at 10.95 mg/kg.

Because only one of the verification bottom soil samples contained PCBs above the RIDEM cleanup standard, W&C contacted Ms. Cynthia Gianfrancesco of RIDEM's Office of Waste Management (OWM) on August 15, 2011 by telephone to discuss whether additional excavation should occur at the Site. Ms. Gianfrancesco directed W&C to Rule 8.10 of the RIDEM Remediation Regulations for guidance.

Rule 8.10 (A)(ii) of the RIDEM Remediation Regulations, Compliance Sampling, states, in part:

"A performing party may propose in the Remedial Action Work Plan to verify compliance by geometrically gridding the former source area and taking not less than twenty compliance samples for laboratory analysis at the intersecting points of the grid. If a performing party utilizes this criteria they may also propose a statistical analysis methodology for determining compliance. The Department reserves the right to take or require additional compliance samples as warranted, and the statistical evaluation shall account for all samples taken. The methodology must meet the following criteria:

- 1. No single sample result exceeds the soil objective by a factor of 5;
- 2. No more than 10% of the individual sample results exceed the soil objective; and
- 3. No single sample result exceeds any Upper Concentration Limit as defined by Rule 8.07 (Upper Concentration Limits).

Because this portion of the Site is currently being managed under EPA's TSCA program as a TSCA-defined low-occupancy site, the applicable TSCA cleanup standard for PCBs in soil at the Site is 25 mg/kg. However, W&C proposed the more stringent 10 mg/kg cleanup standard in the SIP to comply with the RIDEM Remediation Regulations cleanup standard of 10 mg/kg. As such, while Rule 8.10(A)(ii) relates to Remedial Action Work Plan driven compliance sampling activities, W&C is using this rule to establish compliance with RIDEM regulations for the Site.

In order to verify compliance with Rule 8.10, W&C conducted a statistical analysis on all final soil verification bottom samples collected from the Site to determine whether the sample that contain PCBs above RIDEM's cleanup level of 10 mg/kg created a condition of non-compliance with the RIDEM Remediation Regulations.

W&C initially evaluated whether soil samples collected at the Site complied with the criteria in Rule 8.10(A)(ii) listed above. After it was determined that the soil samples were compliant with that criteria, final verification bottom soil samples were evaluated using USEPA's ProUCL (version 4.1) software, which incorporates a statistical approach based on USEPA Guidance Manual, Methods for Evaluating the Attainment of Cleanup Standards, Volume 1: Soils and Soil Media (USEPA, 1989) and the USEPA Issue Paper "The Lognormal Distribution in Environmental



Applications" (USEPA, 1997). These documents describe the statistical procedures for determining that cleanup standards have been attained based on the statistical distribution of the sampling data and statistical confidence interval.

During the statistical analysis of the soil laboratory analytical data, less than detection limit concentration values were used as part of the dataset comprising 55 samples. Of the 55 samples used for the statistical analysis, 47 of the soil samples contained concentrations of PCBs above laboratory method detection limits. Soil concentrations associated with either non-detected results or detected total PCBs for each verification bottom sample collected from the vertical extent of excavation were input into the ProUCL software, which used this information to calculate the UCL. In summary, ProUCL identified a UCL value of 2.874, which is significantly below the 10 mg/kg cleanup level for the Site. This value is based on a lognormal distribution of data using the 95% Kaplan-Meier (KM) estimates using the Bias Corrected Accelerated (BCA) Percentile Bootstrap Method and represents the limit that 95% of samples contain the true mean. A summary of the general UCL statistics generated by ProUCL are provided in **Appendix F**.

Based on ProUCL's UCL of the mean, W&C concludes that verification bottom soils samples collected in support of the remedial activities conducted in accordance with the SIP confirm that remaining concentrations of PCBs in soil remaining in the excavation area meet the cleanup level of 10 mg/kg and are compliant with Rule 8.10 of RIDEM's Remediation Regulations.



5. SUMMARY & CONCLUSIONS

This Report details the PCB cleanup and disposal activities conducted at the Safety-Kleen Cranston facility in accordance with the Notification and EPA's January 20, 2011 PCB Cleanup and Disposal Approval. On behalf of Safety-Kleen, W&C oversaw the soil remediation activities conducted by UIS between June 8 and August 20, 2011.

Cleanup and disposal of PCB-impacted soils were conducted over an area of approximately 1,600 square feet. Vertical limits of excavation ranged between 6 and 24 inches bgs. All soils and other PCB remediation wastes generated in association with removal activities were placed in secure, lined, covered, and labeled waste containers in accordance with 40 CFR 761.65 and 40 CFR 761.40.

Woodard & Curran conducted post-excavation verification sampling in accordance with a 40 CFR 761.280 (Subpart O) sampling plan as described in the SIP. Of the 135 initial verification samples, results indicated that PCB concentrations exceeded the 10 ppm cleanup level at 39 locations. Additional soil removal was conducted and additional verification sampling was performed until results confirmed that all residual PCB levels were less than 10 ppm. A data quality / data usability assessment indicated that the data is of sufficient quality for use in rendering an opinion of soil conditions at the Site.

The volume of in-place soils excavated from the Site totaled 68 yd³ (54 yd³ hazardous waste, 14 yd³ non-hazardous waste). A total weight of 84.79 tons of hazardous waste soils were shipped off-site for disposal at the Model City facility, and a total weight of 23.54 tons of non-hazardous waste soils were shipped off-site for disposal at the TREE facility. Overall, 108.33 tons of soils were removed for off-site disposal between June 10, 2011 and August 9, 2011. After removal activities were complete, UIS backfilled all excavation areas with clean fill.

Based on the results of the removal activities and verification data, the work met the conditions of the Approval and PCB-related remedial actions at the Site are considered complete.



Table 1: Soil Verification Data – Sidewall Sample Results

Sample Date		6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011
Sample Identification		SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-8	Dup-SW-8	SW-9	SW-10	SW-11	SW-12	SW-13	SW-14	SW-15	Dup-SW-15	SW-16
Analyte	Units																		
Aroclor 1016	mg/kg	<14.0	< 0.0537	< 0.0540	<2.22	<0.235	<0.232	<0.208	<102	<201	<0.0583	<0.213	<0.194	<0.230	<0.197	<10.8	<0.211	<0.215	<0.197
Aroclor 1221	mg/kg	<14.0	< 0.0537	< 0.0540	<2.22	<0.235	<0.232	<0.208	<102	<201	<0.0583	<0.213	<0.194	<0.230	<0.197	<10.8	<0.211	<0.215	<0.197
Aroclor 1232	mg/kg	<14.0	< 0.0537	< 0.0540	<2.22	<0.235	<0.232	<0.208	<102	<201	<0.0583	<0.213	<0.194	<0.230	<0.197	<10.8	<0.211	<0.215	<0.197
Aroclor 1242	mg/kg	<14.0	< 0.0537	<0.0540	<2.22	<0.235	<0.232	<0.208	<102	<201	<0.0583	<0.213	<0.194	<0.230	<0.197	<10.8	<0.211	<0.215	<0.197
Aroclor 1248	mg/kg	236.00	< 0.0537	<0.0540	43.60	0.86	3.79	0.70	1920.00	2520.00	<0.0583	16.30	29.30	1.51	6.21	183.00	1.63	2.00	<0.197
Aroclor 1254	mg/kg	<14.0	2.36	3.19	<2.22	2.44	2.46	2.37	<102	<201	9.12	15.80	<0.194	2.39	9.51	<10.8	<0.211	<0.215	0.51
Aroclor 1260	mg/kg	<14.0	0.31	0.40	<2.22	<0.235	<0.232	<0.208	<102	<201	<0.0583	<0.213	<0.194	<0.230	<0.197	<10.8	<0.211	<0.215	<0.197
Aroclor 1262	mg/kg	<14.0	< 0.0537	<0.0540	<2.22	<0.235	<0.232	<0.208	<102	<201	<0.0583	<0.213	<0.194	<0.230	<0.197	<10.8	<0.211	<0.215	<0.197
Aroclor 1268	mg/kg	<14.0	< 0.0537	<0.0540	<2.22	<0.235	<0.232	<0.208	<102	<201	<0.0583	<0.213	<0.194	<0.230	<0.197	<10.8	<0.211	<0.215	<0.197
Total PCBs	mg/kg	236.00	2.67	3.59	43.60	3.30	6.25	3.07	1920.00	2520.00	9.12	32.10	29.30	3.90	15.72	183.00	1.63	2.00	0.51

Table 1: Soil Verification Data - Sidewall Sample Results Safety-Kleen Systems, Inc. 167 Mill Street, Cranston, RI

Sample D	Date	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/17/2011	7/15/2011	6/17/2011	6/17/2011	6/17/2011	6/17/2011	6/20/2011	6/20/2011	6/20/2011	6/20/2011
Sample Identification		SW-17	SW-18	SW-19	Dup-SW-19	SW-20	SW-21	SW-22	SW-23	SW-24	SW-25	SW-25A	SW-26	SW-27	SW-28	SW-29	SW-30	Dup-SW-30	SW-31	SW-32
Analyte	Units																			
Aroclor 1016	mg/kg	<0.201	<0.196	<0.213	<0.211	<0.227	<0.209	<0.227	<0.213	<0.215	<4.72	<4.72	<25.8	<0.214	<4.23	<4.44	<0.227	<0.228	<0.221	<0.222
Aroclor 1221	mg/kg	<0.201	<0.196	<0.213	<0.211	<0.227	<0.209	<0.227	<0.213	<0.215	<4.72	<4.72	<25.8	<0.214	<4.23	<4.44	<0.227	<0.228	<0.221	<0.222
Aroclor 1232	mg/kg	<0.201	<0.196	<0.213	<0.211	<0.227	<0.209	<0.227	<0.213	<0.215	<4.72	<4.72	<25.8	<0.214	<4.23	<4.44	<0.227	<0.228	<0.221	<0.222
Aroclor 1242	mg/kg	<0.201	<0.196	<0.213	<0.211	<0.227	<0.209	<0.227	<0.213	<0.215	<4.72	<4.72	<25.8	<0.214	<4.23	<4.44	<0.227	<0.228	<0.221	<0.222
Aroclor 1248	mg/kg	1.54	1.42	<0.213	<0.211	2.44	<0.209	3.49	7.30	1.48	70.80	56.10	468.00	10.20	80.60	47.10	<0.227	<0.228	<0.221	26.50
Aroclor 1254	mg/kg	2.83	3.07	<0.213	<0.211	<0.227	1.24	<0.227	13.20	6.25	<4.72	56.80	<25.8	17.00	<4.23	78.90	<0.227	<0.228	<0.221	<0.222
Aroclor 1260	mg/kg	<0.201	<0.196	<0.213	<0.211	<0.227	<0.209	<0.227	<0.213	<0.215	<4.72	<4.72	<25.8	<0.214	<4.23	<4.44	<0.227	<0.228	<0.221	<0.222
Aroclor 1262	mg/kg	<0.201	<0.196	<0.213	<0.211	<0.227	<0.209	<0.227	<0.213	<0.215	<4.72	<4.72	<25.8	<0.214	<4.23	<4.44	<0.227	<0.228	<0.221	<0.222
Aroclor 1268	mg/kg	<0.201	<0.196	<0.213	<0.211	<0.227	<0.209	<0.227	<0.213	<0.215	<4.72	<4.72	<25.8	<0.214	<4.23	<4.44	<0.227	<0.228	<0.221	<0.222
Total PCBs	mg/kg	4.37	4.49	<0.213	<0.211	2.44	1.24	3.49	20.50	7.73	70.80	112.90	468.00	27.20	80.60	126.00	<0.227	<0.228	<0.221	26.50

Table 1: Soil Verification Data - Sidewall Sample Results Safety-Kleen Systems, Inc. 167 Mill Street, Cranston, RI

Sample D	Date	7/15/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	7/15/2011	6/21/2011	6/21/2011	7/15/2011	6/21/2011	6/21/2011	6/21/2011	7/12/2011	6/21/2011	7/12/2011	6/21/2011
Sample Identification		SW-32A	SW-33	SW-34	SW-35	SW-36	SW-37	SW-38	SW-39	SW-39A	SW-40	SW-41	SW-41A	SW-42	SW-43	SW-44	SW-44A	SW-45	SW-45A	SW-46
Analyte	Units																			
Aroclor 1016	mg/kg	<0.204	<0.194	<0.194	<0.199	<0.203	<0.208	<0.220	<0.244	<0.230	<0.226	<0.235	<0.233	<0.236	<0.213	<0.215	<0.200	<19.5	<0.229	<0.225
Aroclor 1221	mg/kg	<0.204	<0.194	<0.194	<0.199	<0.203	<0.208	<0.220	<0.244	<0.230	<0.226	<0.235	<0.233	<0.236	<0.213	<0.215	<0.200	<19.5	<0.229	<0.225
Aroclor 1232	mg/kg	<0.204	<0.194	<0.194	<0.199	<0.203	<0.208	<0.220	<0.244	<0.230	<0.226	<0.235	<0.233	<0.236	<0.213	<0.215	<0.200	<19.5	<0.229	<0.225
Aroclor 1242	mg/kg	<0.204	<0.194	<0.194	<0.199	<0.203	<0.208	<0.220	<0.244	<0.230	<0.226	<0.235	<0.233	<0.236	<0.213	<0.215	<0.200	<19.5	<0.229	<0.225
Aroclor 1248	mg/kg	1.03	<0.194	<0.194	2.73	<0.203	<0.208	2.30	9.19	<0.230	12.80	21.00	23.60	3.68	<0.213	2.27	1.00	110.00	<0.229	9.63
Aroclor 1254	mg/kg	<0.204	0.29	2.06	6.21	1.39	3.88	6.69	15.90	1.74	18.10	26.10	25.00	10.30	<0.213	7.75	<0.200	<19.5	<0.229	18.30
Aroclor 1260	mg/kg	<0.204	<0.194	<0.194	<0.199	<0.203	<0.208	<0.220	<0.244	0.36	<0.226	<0.235	<0.233	<0.236	<0.213	<0.215	<0.200	<19.5	<0.229	<0.225
Aroclor 1262	mg/kg	<0.204	<0.194	<0.194	<0.199	<0.203	<0.208	<0.220	<0.244	<0.230	<0.226	<0.235	<0.233	<0.236	<0.213	<0.215	<0.200	<19.5	<0.229	<0.225
Aroclor 1268	mg/kg	<0.204	<0.194	<0.194	<0.199	<0.203	<0.208	<0.220	<0.244	<0.230	<0.226	<0.235	<0.233	<0.236	<0.213	<0.215	<0.200	<19.5	<0.229	<0.225
Total PCBs	mg/kg	1.03	0.29	2.06	8.94	1.39	3.88	8.99	25.09	2.10	30.90	47.10	48.60	13.98	<0.213	10.02	1.00	110.00	<0.229	27.93

Sample D	Date	7/12/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	7/12/2011	7/12/2011	7/12/2011	7/12/2011	7/12/2011	7/15/2011	7/27/2011	7/15/2011	7/27/2011	7/15/2011	7/26/2011	8/5/2011	8/5/2011
Sample Ident	Sample Identification		SW-47	SW-48	SW-49	Dup-SW-49	SW-50	SW-51	SW-52	SW-53	SW-54	SW-55	SW-56	SW-56A	SW-57	SW-57A	SW-58	SW-59	SW-59A	SW-59B
Analyte	Units																			
Aroclor 1016	mg/kg	<0.193	<0.205	<0.222	<0.225	<2.18	<0.220	< 0.230	<0.204	<0.202	<0.255	<0.233	<0.240	<0.201	<0.245	<0.225	< 0.250	<0.224	< 0.0515	<0.0543
Aroclor 1221	mg/kg	<0.193	<0.205	<0.222	<0.225	<2.18	<0.220	<0.230	<0.204	<0.202	<0.255	<0.233	<0.240	<0.201	<0.245	<0.225	< 0.250	<0.224	<0.0515	< 0.0543
Aroclor 1232	mg/kg	<0.193	<0.205	<0.222	<0.225	<2.18	<0.220	<0.230	<0.204	<0.202	<0.255	<0.233	<0.240	<0.201	<0.245	<0.225	<0.250	<0.224	<0.0515	<0.0543
Aroclor 1242	mg/kg	<0.193	<0.205	<0.222	<0.225	<2.18	<0.220	<0.230	<0.204	<0.202	<0.255	<0.233	<0.240	<0.201	<0.245	<0.225	<0.250	<0.224	<0.0515	<0.0543
Aroclor 1248	mg/kg	<0.193	<0.205	<0.222	<0.225	<2.18	1.78	1.97	<0.204	<0.202	<0.255	<0.233	9.57	1.84	17.30	<0.225	<0.250	5.91	<0.0515	<0.0543
Aroclor 1254	mg/kg	<0.193	2.76	2.94	2.23	<2.18	3.24	<0.230	6.45	7.30	1.46	4.33	10.60	2.62	16.60	<0.225	7.81	13.20	0.56	0.54
Aroclor 1260	mg/kg	<0.193	<0.205	<0.222	<0.225	<2.18	<0.220	0.43	1.07	6.22	0.68	1.03	<0.240	<0.201	<0.245	<0.225	1.55	<0.224	<0.0515	<0.0543
Aroclor 1262	mg/kg	<0.193	<0.205	<0.222	<0.225	<2.18	<0.220	<0.230	<0.204	<0.202	<0.255	<0.233	<0.240	<0.201	<0.245	<0.225	<0.250	<0.224	<0.0515	< 0.0543
Aroclor 1268	mg/kg	<0.193	<0.205	<0.222	<0.225	<2.18	<0.220	<0.230	<0.204	<0.202	<0.255	<0.233	<0.240	<0.201	<0.245	<0.225	< 0.250	<0.224	<0.0515	<0.0543
Total PCBs	mg/kg	<0.193	2.76	2.94	2.23	<2.18	5.02	2.40	7.52	13.52	2.14	5.36	20.17	4.46	33.90	<0.225	9.36	19.11	0.56	0.54



Table 2: Soil Verification Data – Excavation Bottom Results

Table 2: Soil Verification Data - Excavation Bottom Results
Safety-Kleen Systems, Inc.
167 Mill Street, Cranston, RI

Sample Date		6/8/2011	6/8/2011	6/21/2011	6/21/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/8/2011	6/9/2011	6/9/2011	6/9/2011
Sample Identification	1	VB-1	VB-2	VB-2B	Dup-VB-2B	VB-3	VB-4	VB-5	VB-6	VB-7	VB-8	VB-9	VB-10	VB-11	VB-12	VB-13	VB-14	VB-15
Analyte	Units																	
Aroclor 1016	mg/kg	<0.213	<2.22	<0.196	<0.211	<0.221	<0.221	<0.521	<0.237	<0.245	<0.243	<0.265	<0.222	<0.226	<0.226	<0.207	<0.218	<0.189
Aroclor 1221	mg/kg	<0.213	<2.22	<0.196	<0.211	<0.221	<0.221	<0.521	<0.237	<0.245	<0.243	<0.265	<0.222	<0.226	<0.226	<0.207	<0.218	<0.189
Aroclor 1232	mg/kg	<0.213	<2.22	<0.196	<0.211	<0.221	<0.221	<0.521	<0.237	<0.245	<0.243	<0.265	<0.222	<0.226	<0.226	<0.207	<0.218	<0.189
Aroclor 1242	mg/kg	<0.213	<2.22	<0.196	<0.211	<0.221	<0.221	<0.521	<0.237	<0.245	<0.243	<0.265	<0.222	<0.226	<0.226	<0.207	<0.218	<0.189
Aroclor 1248	mg/kg	0.62	23.30	<0.196	<0.211	0.34	0.30	<0.521	2.27	0.56	1.08	1.44	<0.222	1.70	1.24	2.48	2.55	8.13
Aroclor 1254	mg/kg	0.87	<2.22	<0.196	<0.211	0.73	0.85	0.61	4.00	1.47	2.57	<0.265	<0.222	2.99	1.80	<0.207	3.86	<0.189
Aroclor 1260	mg/kg	<0.213	<2.22	<0.196	<0.211	<0.221	<0.221	<0.521	< 0.237	<0.245	<0.243	< 0.265	<0.222	<0.226	<0.226	<0.207	<0.218	<0.189
Aroclor 1262	mg/kg	<0.213	<2.22	<0.196	<0.211	<0.221	<0.221	<0.521	< 0.237	<0.245	<0.243	< 0.265	<0.222	<0.226	<0.226	<0.207	<0.218	<0.189
Aroclor 1268	mg/kg	<0.213	<2.22	<0.196	<0.211	<0.221	<0.221	<0.521	<0.237	<0.245	<0.243	<0.265	<0.222	<0.226	<0.226	<0.207	<0.218	<0.189
Total PCBs	mg/kg	1.49	23.30	<0.196	<0.211	1.07	1.15	0.61	6.27	2.03	3.65	1.44	<0.222	4.69	3.04	2.48	6.41	8.13

Table 2: Soil Verification Data - Excavation Bottom Results
Safety-Kleen Systems, Inc.
167 Mill Street, Cranston, RI

Sample Date		6/9/2011	6/20/2011	6/9/2011	6/20/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/9/2011	6/17/2011	6/17/2011	6/17/2011	6/20/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011
Sample Identification		VB-16	VB-16B	VB-17	VB-17B	VB-18	VB-19	VB-20	VB-21	VB-22	VB-23	VB-24	VB-25	VB-26	VB-27	VB-28	VB-29	VB-30	VB-31	VB-32
Analyte	Units																			
Aroclor 1016	mg/kg	<43.1	<0.211	<10.6	<0.220	<0.207	<0.220	<0.211	<0.211	<0.206	<0.211	<0.207	<0.248	<0.219	<0.239	<0.247	<0.222	<0.196	<0.202	<0.204
Aroclor 1221	mg/kg	<43.1	<0.211	<10.6	<0.220	<0.207	<0.220	<0.211	<0.211	<0.206	<0.211	<0.207	<0.248	<0.219	<0.239	<0.247	<0.222	<0.196	<0.202	<0.204
Aroclor 1232	mg/kg	<43.1	<0.211	<10.6	<0.220	<0.207	<0.220	<0.211	<0.211	<0.206	<0.211	<0.207	<0.248	<0.219	<0.239	<0.247	<0.222	<0.196	<0.202	<0.204
Aroclor 1242	mg/kg	<43.1	<0.211	<10.6	<0.220	<0.207	<0.220	<0.211	<0.211	<0.206	<0.211	<0.207	<0.248	<0.219	<0.239	<0.247	<0.222	<0.196	<0.202	<0.204
Aroclor 1248	mg/kg	689.00	0.33	177.00	0.47	0.65	<0.220	<0.211	<0.211	<0.206	<0.211	1.17	0.66	2.30	0.67	6.30	<0.222	0.21	<0.202	<0.204
Aroclor 1254	mg/kg	<43.1	<0.211	<10.6	<0.220	<0.207	<0.220	0.27	<0.211	<0.206	1.09	<0.207	0.49	2.19	0.65	<0.247	<0.222	<0.196	<0.202	0.45
Aroclor 1260	mg/kg	<43.1	<0.211	<10.6	<0.220	<0.207	<0.220	<0.211	0.41	<0.206	<0.211	<0.207	<0.248	<0.219	<0.239	<0.247	<0.222	<0.196	<0.202	<0.204
Aroclor 1262	mg/kg	<43.1	<0.211	<10.6	<0.220	<0.207	<0.220	<0.211	<0.211	<0.206	<0.211	<0.207	<0.248	<0.219	<0.239	<0.247	<0.222	<0.196	<0.202	<0.204
Aroclor 1268	mg/kg	<43.1	<0.211	<10.6	<0.220	<0.207	<0.220	<0.211	<0.211	<0.206	<0.211	<0.207	<0.248	<0.219	<0.239	<0.247	<0.222	<0.196	<0.202	<0.204
Total PCBs	mg/kg	689.00	0.33	177.00	0.47	0.65	<0.220	0.27	0.41	<0.206	1.09	1.17	1.16	4.49	1.33	6.30	<0.222	0.21	<0.202	0.45

Table 2: Soil Verification Data - Excavation Bottom Results
Safety-Kleen Systems, Inc.
167 Mill Street, Cranston, RI

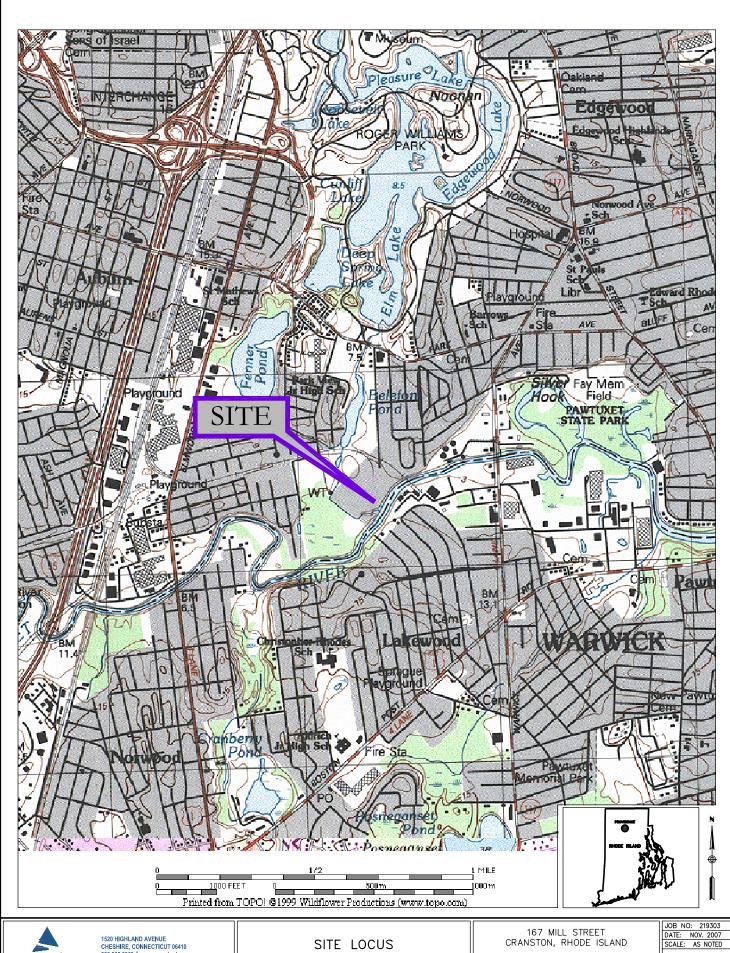
Sample Date		6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	6/21/2011	7/12/2011	7/26/2011	8/5/2011	7/12/2011	7/26/2011	7/12/2011	7/26/2011	7/12/2011	7/12/2011
Sample Identification		VB-33	VB-34	VB-35	VB-36	VB-37	VB-38	VB-39	VB-40	VB-41	VB-42	VB-42A	VB-42B	VB-43	VB-43A	VB-44	VB-44A	VB-45	VB-46
Analyte	Units																		
Aroclor 1016	mg/kg	<0.218	<0.208	<0.229	<0.189	<0.219	<0.211	<0.204	<0.215	<0.211	<0.236	<0.311	<0.0658	<0.233	<0.233	<0.237	<0.219	<0.270	<0.276
Aroclor 1221	mg/kg	<0.218	<0.208	<0.229	<0.189	<0.219	<0.211	<0.204	<0.215	<0.211	<0.236	<0.311	<0.0658	<0.233	<0.233	<0.237	<0.219	<0.270	<0.276
Aroclor 1232	mg/kg	<0.218	<0.208	<0.229	<0.189	<0.219	<0.211	<0.204	<0.215	<0.211	<0.236	<0.311	<0.0658	<0.233	<0.233	<0.237	<0.219	<0.270	<0.276
Aroclor 1242	mg/kg	<0.218	<0.208	<0.229	<0.189	<0.219	<0.211	<0.204	<0.215	<0.211	<0.236	<0.311	<0.0658	<0.233	<0.233	<0.237	<0.219	<0.270	<0.276
Aroclor 1248	mg/kg	<0.218	0.78	2.05	0.26	2.12	<0.211	<0.204	<0.215	3.35	<0.236	10.20	7.75	< 0.233	1.49	12.80	<0.219	<0.270	10.20
Aroclor 1254	mg/kg	0.37	1.34	3.20	0.34	3.41	0.64	0.28	<0.215	6.64	9.82	<0.311	3.20	3.61	<0.233	<0.237	0.51	1.82	<0.276
Aroclor 1260	mg/kg	<0.218	<0.208	<0.229	<0.189	<0.219	<0.211	<0.204	<0.215	<0.211	7.20	0.75	<0.0658	6.66	1.96	2.03	<0.219	2.83	1.44
Aroclor 1262	mg/kg	<0.218	<0.208	<0.229	<0.189	<0.219	<0.211	<0.204	<0.215	<0.211	<0.236	<0.311	<0.0658	< 0.233	<0.233	<0.237	<0.219	<0.270	<0.276
Aroclor 1268	mg/kg	<0.218	<0.208	<0.229	<0.189	<0.219	<0.211	<0.204	<0.215	<0.211	<0.236	<0.311	<0.0658	<0.233	<0.233	<0.237	<0.219	<0.270	<0.276
Total PCBs	mg/kg	0.37	2.12	5.25	0.60	5.53	0.64	0.28	<0.215	9.99	17.02	10.95	10.95	10.27	3.45	14.83	0.51	4.65	11.64

Table 2: Soil Verification Data - Excavation Bottom Results
Safety-Kleen Systems, Inc.
167 Mill Street, Cranston, RI

Sample Date		7/12/2011	7/26/2011	7/15/2011	7/15/2011	7/15/2011	7/15/2011	7/26/2011	8/5/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011
Sample Identification		Dup-VB-46	VB-46A	VB-47	VB-48	VB-49	VB-50	VB-51	VB-51A	VB-52	VB-53	VB-54	VB-55
Analyte	Units												
Aroclor 1016	mg/kg	<0.263	<0.224	<0.211	<0.244	<0.239	<0.219	<0.233	<0.0602	<0.225	<0.224	<0.255	<0.236
Aroclor 1221	mg/kg	<0.263	<0.224	<0.211	<0.244	<0.239	<0.219	<0.233	<0.0602	<0.225	<0.224	<0.255	<0.236
Aroclor 1232	mg/kg	< 0.263	<0.224	<0.211	<0.244	<0.239	<0.219	<0.233	<0.0602	<0.225	<0.224	<0.255	<0.236
Aroclor 1242	mg/kg	<0.263	<0.224	<0.211	<0.244	<0.239	<0.219	<0.233	<0.0602	<0.225	<0.224	<0.255	<0.236
Aroclor 1248	mg/kg	11.60	0.79	1.35	<0.244	<0.239	<0.219	3.13	<0.0602	1.21	<0.224	4.07	<0.236
Aroclor 1254	mg/kg	<0.263	1.06	1.72	1.84	2.85	0.42	7.56	1.03	1.48	0.23	<0.255	<0.236
Aroclor 1260	mg/kg	1.67	<0.224	<0.211	<0.244	<0.239	<0.219	<0.233	<0.0602	<0.225	<0.224	0.49	<0.236
Aroclor 1262	mg/kg	< 0.263	<0.224	<0.211	<0.244	<0.239	<0.219	<0.233	<0.0602	<0.225	<0.224	<0.255	<0.236
Aroclor 1268	mg/kg	<0.263	<0.224	<0.211	<0.244	<0.239	<0.219	<0.233	<0.0602	<0.225	<0.224	<0.255	<0.236
Total PCBs	mg/kg	13.27	1.85	3.07	1.84	2.85	0.42	10.69	1.03	2.69	0.23	4.56	<0.236



Figure 1: Site Locus





1520 HIGHLAND AVENUE CHESHIRE, CONNECTICUT 06410 888.265.8969 | www.woodardcurran.com

FIGURE 1

COMMITMENT & INTEGRITY DRIVE RESULTS

DESIGNED BY: CHECKED BY: MP 219303 RI FIG 1.dwg DRAWN BY:



Figure 2: Soil Excavation Plan and Verification Sample Locations – Round #1

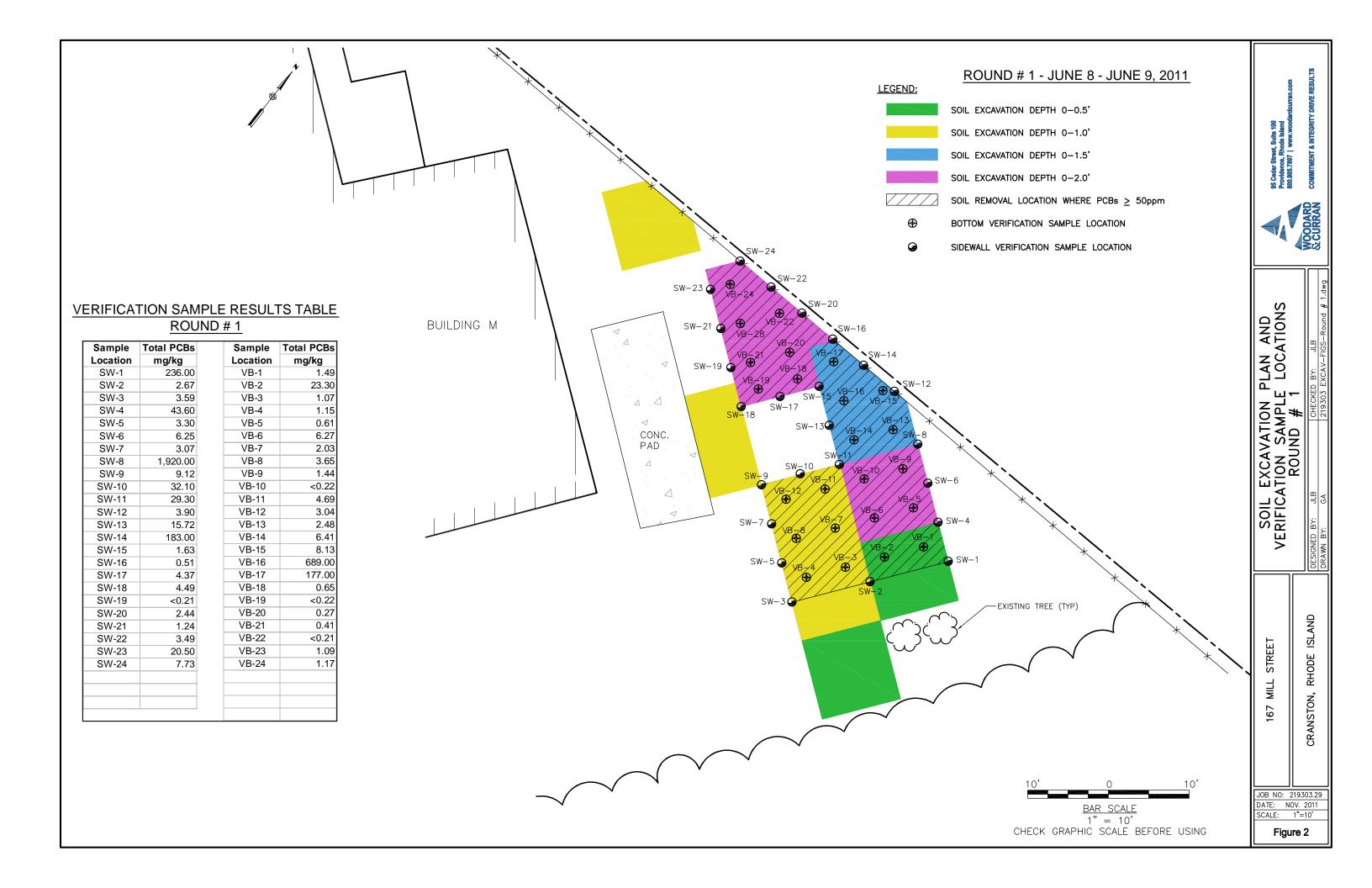




Figure 3: Soil Excavation Plan and Verification Sample Locations – Round #2

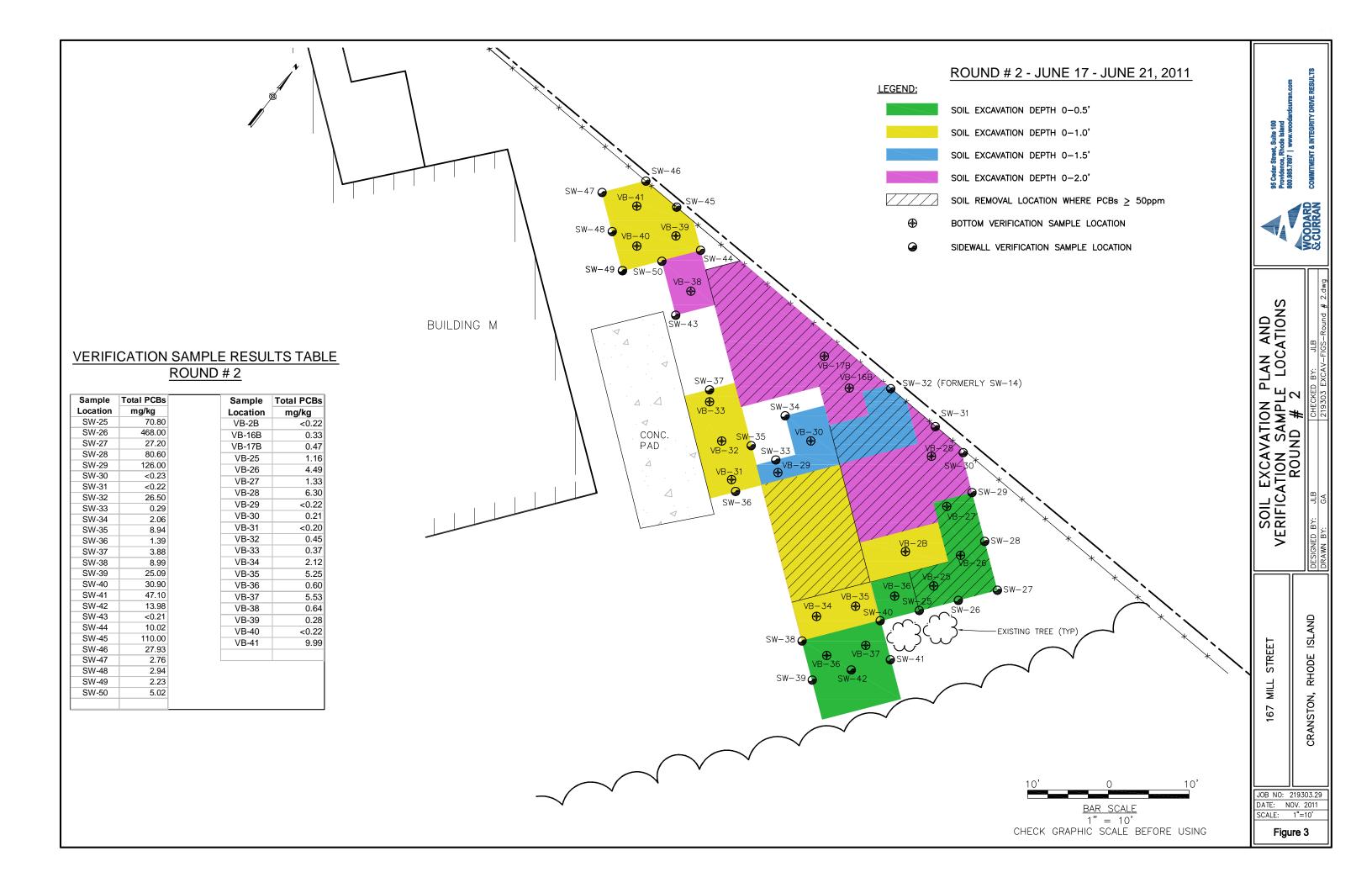




Figure 4: Soil Excavation Plan and Verification Sample Locations – Round #3



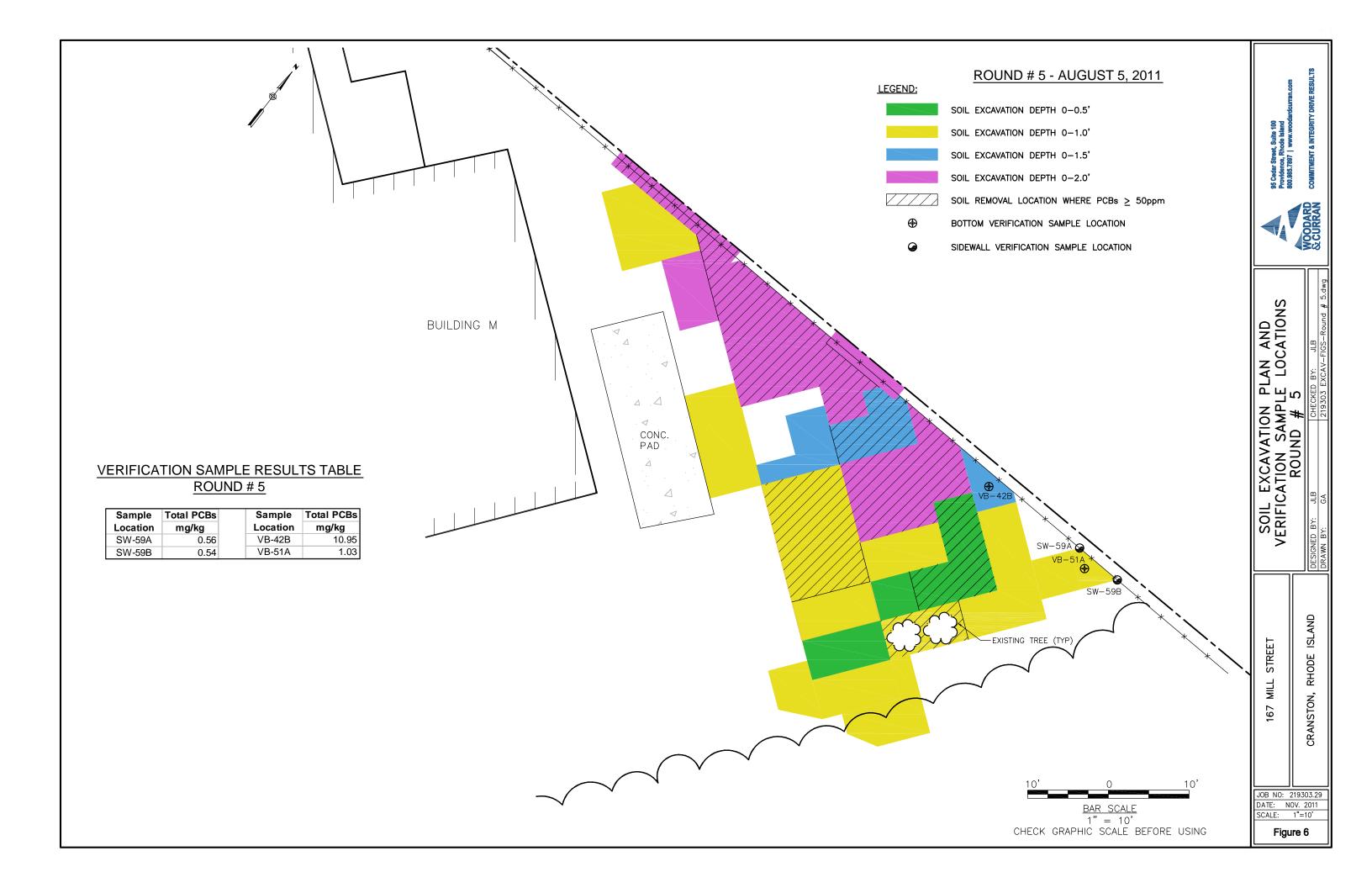


Figure 5: Soil Excavation Plan and Verification Sample Locations – Round #4





Figure 6: Soil Excavation Plan and Verification Sample Locations – Round #5





APPENDIX A: EPA APPROVAL



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I 5 POST OFFICE SQUARE, SUITE 100 BOSTON, MASSACHUSETTS 02109-3912

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

JAN 20 2011

Mr. Stephen Fleming Senior Remediation Manager Safety-Kleen Systems, Inc. 11923 Tramway Drive Cincinnati, Ohio 45241

Re:

PCB Cleanup and Disposal Approval under §§ 761.61(a) and (c)

Safety-Kleen Systems, Inc. Cranston Facility

Cranston, Rhode Island

Dear Mr. Fleming:

This is in response to the Safety-Kleen Systems, Inc. (Safety-Kleen) Notification¹ to address PCB-contaminated soils on the property located at 167 Mill Street, Cranston, Rhode Island (the Site). The Site contains PCB-contaminated soils that exceed the allowable PCB levels for unrestricted use under the federal PCB regulations at 40 CFR § 761.61(a). Safety-Kleen has requested an approval to clean up and dispose of the PCB-contaminated soils located at the Site under the PCB self-implementing cleanup and disposal option (SIP) at 40 CFR § 761.61(a).

Safety-Kleen has determined that the Site meets the definition for a *low occupancy area* under § 761.3 which would allow less than or equal to (≤) 25 parts per million PCBs to remain on-site. The Site is also regulated for cleanup under the Rhode Island Department of Environmental Management (RIDEM) remediation regulations.

To meet both the federal and state requirements, Safety-Kleen is proposing the following PCB cleanup and disposal activities under § 761.61(a) and the RIDEM remediation regulations:

Remove all PCB-contaminated soils and debris with PCB concentrations greater than (>) 10 parts per million (ppm);

Information was submitted on behalf of Safety-Kleen Systems, Inc by Woodard & Curran. The information was provided to satisfy the notification requirement under 40 CFR § 761.61(a). Information was provided dated November, 2010 (SIP), December 20, 2010 (Response to Comments), December, 2010 (Revised SIP), and January 6, 2011 (e-mail response to comments). These submittals will be referred to as the "Notification."

- ➤ Dispose of soils with PCB concentrations > 10 ppm but < 50 ppm at a State permitted disposal facility in accordance with § 761.61(a)(5)(i)(B)(2)(ii):
- Dispose of soils with PCB concentrations greater than or equal to (≥ 50 ppm at a TSCAapproved disposal facility or a RCRA hazardous waste landfill in accordance with §§ 761.61(a)(5)(i)(B)(2)(iii);
- ➤ Record an environmental land use restriction (ELUR) to document that PCBs at ≥1 ppm remain at the Site.

With the exception of the required characterization sampling frequency, your proposed plan meets the requirements under § 761.61(a). Given the Site history, the characterization sampling conducted at the Site, and the proposed additional sampling which will be conducted during and following the removal of PCB-contaminated soils, EPA finds that the characterization sampling is adequate for purposes of segregation of the PCB-contaminated wastes for off-site disposal and that this activity will create no unreasonable risk to public health or the environment. EPA may approve the characterization sampling for disposal under § 761.61(c).

Safety-Kleen's may proceed with its PCB cleanup and disposal under 40 CFR §§ 761.61(a) and (c); its Notification; and this Approval, subject to the conditions of Attachment 1. Please be aware that this Approval does not release Safety-Kleen from any applicable requirements of federal, state or local law, including those requirements necessary to address pollutant mobility and direct exposure criteria; and, to the cleanup of other [non-PCB] contaminants. EPA encourages Safety-Kleen to continue to work with RIDEM to insure it has all approvals necessary for this project.

This Approval only addresses cleanup and disposal of the PCB remediation waste identified in the Notification. In the event that Safety-Kleen identifies other PCB-contaminated wastes subject to cleanup and disposal under the PCB regulations, Safety-Kleen will be required to notify EPA and cleanup the PCB-contaminated wastes in accordance with 40 CFR Part 761 (see Approval Condition 1.)

Questions and correspondence regarding this Approval should be directed to:

Katherine A. Woodward, PE, Project Manager United States Environmental Protection Agency 5 Post Office Square, Suite 100

Mail Code: OSRR07-2

Boston, Massachusetts 02109-3912

Telephone: (617) 918-1353 Facsimile: (617) 918-0527

EPA shall not consider this project complete until it has received all submittals required under this Approval. Please be aware that upon EPA receipt and review of the submittals, EPA may request any additional information necessary to establish that the work has been completed in accordance with 40 CFR Part 761, the Notification, and this Approval.

Sincerely,

James T. Owens, III, Director

Office of Site Remediation & Restoration

Attachment 1

cc: Janelle Bonn, Woodard & Curran

Joan Taylor, Office of Waste Management, RIDEM Kelly Owens, Office of Waste Management, RIDEM

Frank Battaglia, EPA

File

ATTACHMENT 1:

PCB CLEANUP AND DISPOSAL APPROVAL CONDITIONS SAFETY-KLEEN SYSTEMS, INC. CRANSTON FACILITY CRANSTON, RHODE ISLAND

GENERAL CONDITIONS

- 1. This Approval is granted under the authority of Section 6(e) of the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2605(e), and the PCB regulations at 40 CFR Part 761, and applies solely to *PCB remediation waste* located at the Site as identified in the Notification.
 - a. In the event that Safety-Kleen Systems, Inc (Safety-Kleen) identifies other PCB-contaminated wastes subject to cleanup and disposal under the PCB regulations, Safety-Kleen will be required to notify EPA and clean up the PCB-contaminated wastes in accordance with 40 CFR Part 761.
 - b. Safety-Kleen may submit a separate plan to address the PCB contamination or may modify the Notification to incorporate cleanup of the PCBs under this Approval in accordance with Condition 15.
- 2. Safety-Kleen shall conduct on-site activities in accordance with the conditions of this Approval and with the Notification.
- 3. In the event that the cleanup plan described in the Notification differs from the conditions specified in this Approval, the conditions of this Approval shall govern.
- 4. The terms and abbreviations used herein shall have the meanings as defined in 40 CFR § 761.3 unless otherwise defined within this Approval.
- 5. Safety-Kleen must comply with all applicable federal, state and local regulations in the storage, handling, and disposal of all PCB wastes, including PCBs, PCB Items and decontamination wastes generated under this Approval. In the event of a new spill during response actions, Safety-Kleen shall contact EPA within 24 hours for direction on sampling and cleanup requirements.
- 6. Safety-Kleen is responsible for the actions of all officers, employees, agents, contractors, subcontractors, and others who are involved in activities conducted under this Approval. If at any time Safety-Kleen has or receives information indicating that Safety-Kleen or any other person has failed, or may have failed, to comply with any provision of this Approval, it must report the information to EPA in writing within 24 hours of having or receiving the information.

- 7. This Approval does not constitute a determination by EPA that the transporters or disposal facilities selected by Safety-Kleen are authorized to conduct the activities set forth in the Notification. Safety-Kleen is responsible for ensuring that its selected transporters and disposal facilities are authorized to conduct these activities in accordance with all applicable federal, state and local statutes and regulations.
- 8. This Approval does not: 1) waive or compromise EPA's enforcement and regulatory authority; 2) release Safety-Kleen from compliance with any applicable requirements of federal, state or local law; or 3) release Safety-Kleen from liability for, or otherwise resolve, any violations of federal, state or local law.

NOTIFICATION AND CERTIFICATION CONDITIONS

- 9. This Approval may be revoked if the EPA does not receive written notification from Safety-Kleen of its acceptance of the conditions of this Approval within 10 business days of receipt.
- 10. Safety-Kleen shall notify EPA in writing of the scheduled date of commencement of onsite activities at least 1 business day prior to conducting any work under this Approval.
- 11. Prior to initiating onsite work under this Approval, Safety-Kleen shall submit the following information:
 - a. A certification signed by its selected remediation contractor, stating that the contractor has read and understands the Notification, and agrees to abide by the conditions specified in this Approval;
 - b. A contractor work plan, prepared and submitted by the selected contractor(s), detailing the procedures that will be employed for removal of PCB-contaminated wastes and for air monitoring during removal activities. This work plan should also include information on the decontamination and verification sampling of soil, waste storage, handling, and disposal for each waste stream type and for equipment decontamination; and,
 - c. A certification signed by the selected analytical laboratory, stating that the laboratory has read and understands the sample preparation, extraction, analytical and quality assurance requirements specified in the Notification and in this Approval.

REMEDIAL AND DISPOSAL CONDITIONS

- 12. The cleanup level for bulk *PCB remediation waste* (i.e., soils) at the Site shall be in accordance with 40 CFR § 761.61(a)(4).
 - a. The cleanup level for bulk *PCB remediation waste* at the Site shall be less than or equal to (≤) 10 ppm for soils. Samples (i.e. soils) shall be collected on a bulk basis (i.e. mg/Kg).
 - i) Following excavation of the greater than or equal to (≥ 50 ppm PCB-contaminated soils, sampling shall be conducted in accordance with Subpart O to confirm that all ≥50 ppm PCB-contaminated soils have been removed prior to removal of the < 50 ppm PCB-contaminated soil. Composite sampling may not be conducted to confirm that the ≥50 ppm PCB-contaminated soil has been removed, and;
 - ii) Following excavation of > 10 ppm PCB-contaminated soils, sampling shall be conducted in accordance with Subpart O to confirm that all > 10 ppm PCB-contaminated soils have been removed.
 - b. Bulk *PCB remediation waste* with \geq 50 ppm shall be disposed of in accordance with $\frac{5}{61.61}(a)(5)(i)(B)(2)(iii)$.
 - c. Bulk *PCB remediation waste* with greater than (>) 10 ppm but less than (<) 50 ppm shall be disposed of in accordance with § 76 1.61(a)(5)(i)(B)(2)(ii) or § 761.61(a)(5)(i)(B)(2)(iii).
 - d. Chemical extraction for PCBs shall be conducted using Methods 3500B/3540C of SW-846 for solid matrices and Method 3500B/3510C of SW-846 for aqueous matrices; and, chemical analysis for PCBs shall be conducted using Method 8082 of SW-846, unless another extraction or analytical method(s) is validated according to Subpart Q.
- 13. All PCB waste (regardless of concentration) generated as a result of the activities described in the Notification, excluding any decontaminated materials, shall be marked in accordance with § 761.40; stored in a manner prescribed in § 761.65; and, disposed of in accordance with 40 CFR § 761.61(a)(5), unless otherwise specified below:
 - a. Decontamination wastes and residues shall be disposed of in accordance with 40 CFR § 761.79(g).
 - b. Moveable equipment, tools, and sampling equipment shall be decontaminated in accordance with either 40 CFR § 761.79(b)(3)(i)(A), § 761.79(b)(3)(ii)(A), or § 761.79(c)(2).

c. PCB-contaminated water generated during decontamination or dewatering shall be decontaminated in accordance with 40 CFR § 761.79(b)(1) or disposed of under § 761.60.

INSPECTION, MODIFICATION AND REVOCATION CONDITIONS

- 14. Safety-Kleen shall allow any authorized representative of the Administrator of the EPA to inspect the Site, to inspect records, and to take samples as may be necessary to determine compliance with the PCB regulations and this Approval. Any refusal by Safety-Kleen to allow such an inspection (as authorized by Section 11 of TSCA) shall be grounds for revocation of this Approval.
- 15. Any proposed modification(s) in the plan, specifications, or information in the Notification must be submitted to EPA no less than 14 calendar days prior to the proposed implementation of the change. Such proposed modifications will be subject to the procedures of 40 CFR § 761.61(a)(3)(ii).
- 16. Any departure from the conditions of this Approval without prior, written authorization from the EPA may result in the revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.
- 17. Any misrepresentation or omission of any material fact in the Notification or in any records or reports may result in the EPA's revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.
- 18. Approval for these activities may be revoked, modified or otherwise altered: if EPA finds a violation of the conditions of this Approval or of 40 CFR Part 761, including EPA's PCB Spill Cleanup Policy, or other applicable rules and regulations; or, if EPA finds that these activities present an unreasonable risk to public health or the environment.

RECORDKEEPING AND REPORTING CONDITIONS

19. Safety-Kleen shall prepare and maintain all records and documents required by 40 CFR Part 761, including but not limited to the records required under Subparts J and K. A written record of the cleanup and the analytical sampling shall be established and maintained by Safety-Kleen in one centralized location until such time as EPA authorizes, in writing, an alternative disposition for such records. All records shall be made available for inspection by authorized representatives of EPA.

- 20. Safety-Kleen shall submit a final report to EPA within 60 days of completion of the activities authorized under this Approval. At a minimum, this final report shall include: a short narrative of the cleanup and disposal activities; characterization and confirmation sampling analytical results (as applicable); copies of the accompanying analytical chains of custody; field and laboratory quality control/quality assurance checks; an estimate of the quantity of PCB waste disposed of and the size of the remediated area(s); copies of manifests and bills of lading; and copies of certificates of disposal or similar certifications issued by the disposer.
- 21. Required submittals shall be mailed to:

Katherine A Woodward, PE, Project Manager United States Environmental Protection Agency 5 Post Office Square, Suite 100 Mail Code: OSRR07-2 Boston, Massachusetts 02109-3912

22. No record, report or communication required under this Approval shall qualify as a self-audit or voluntary disclosure under EPA audit, self disclosure or penalty policies.

END OF ATTACHMENT 1



APPENDIX B: LABORATORY DATA – VERIFICATION SAMPLES (ON CD)



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1106094

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard Laboratory Director

Digitally signed by Laurel Stoddard Date: 2011.06.10 16:16:15 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106094

SAMPLE RECEIPT

The following samples were received on June 08, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	<u>SampleName</u>	<u>Matrix</u>	Analysis
1106094-01	SW-1	Soil	8082
1106094-02	SW-2	Soil	8082
1106094-03	SW-3	Soil	8082
1106094-04	SW-9	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106094

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1106094-01

Elevated Method Reporting Limits due to sample matrix (EL).

1106094-01

Surrogate recovery(ies) diluted below the MRL (SD).

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene

(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

<u>Definitions of Quality Control Parameters</u>

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: SW-1

Date Sampled: 06/08/11 15:00

Percent Solids:

92

Initial Volume: 19.4 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106094 ESS Laboratory Sample ID: 1106094-01

Sample Matrix: Soil

Units: mg/kg dry Analyst: IBM

Prepared: 6/8/11 18:10

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	\mathbf{c}		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (14.0)	10	250	06/09/11 20:56	CF10817
Aroclor 1221	ND (14.0)	10	250	06/09/11 20:56	CF10817
Arocior 1232	ND (14.0)	10	250	06/09/11 20:56	CF10817
Aroclor 1242	ND (14.0)	10	250	06/09/11 20:56	CF10817
Aroclor 1248	236 (14.0)	10	250	06/09/11 20:56	CF10817
Aroclor 1254	ND (14.0)	10	250	06/09/11 20:56	CF10817
Aroclor 1260	ND (14.0)	10	250	06/09/11 20:56	CF10817
Aroclor 1262	ND (14.0)	10	250	06/09/11 20:56	CF10817
Aroclor 1268	ND (14.0)	10	250	06/09/11 20:56	CF10817

Qualifier

Limits

Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	<i>30-150</i>
Surrogate: Tetrachloro-m-xylene	%	SD.	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	5D	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-2 Date Sampled: 06/08/11 15:05

Percent Solids: 94

Initial Volume: 19.8 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106094 ESS Laboratory Sample ID: 1106094-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/8/11 18:10

8082 Polychlorinated Biphenyls (PCB)

DΙ	n	 DE	_
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I imits

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.0537)	10	1	06/09/11 20:18	CF10817
Aroclor 1221	ND (0.0537)	10	1	06/09/11 20:18	CF10817
Aroclor 1232	ND (0.0537)	10	1	06/09/11 20:18	CF10817
Aroclor 1242	ND (0.0537)	10	1	06/09/11 20:18	CF10817
Aroclor 1248	ND (0.0537)	10	1	06/09/11 20:18	CF10817
Aroclor 1254	2.36 (0.269)	10	5	06/09/11 21:34	CF10817
Aroclor 1260	0.313 (0.0537)	10	I	06/09/11 20:18	CF10817
Aroclor 1262	ND (0.0537)	10	1	06/09/11 20:18	CF10817
Aroclor 1268	ND (0.0537)	10	1	06/09/11 20:18	CF10817

Qualifier

	Antecovery	Qualifici	Linita
Surrogate: Decachlorobiphenyl	124 %		30-150
Surrogate: Decachlorobiphenyl [2C]	110 %		<i>30-150</i>
Surrogate: Tetrachloro-m-xylene	111 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	109 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: SW-3

Date Sampled: 06/08/11 15:10

Percent Solids:

94

Initial Volume: 19.7 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106094 ESS Laboratory Sample ID: 1106094-03

Sample Matrix: Soil

Units: mg/kg dry Analyst: IBM

Prepared: 6/8/11 18:10

8082 Polychlorinated Biphenyls (PCB)

RI - 1	RES	DEC
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Analyte Aroclor 1016	<u>Results (MRL)</u> ND (0.0540)	Limit 10	<u>DF</u>	<u>Analyzed</u> <u>Sequence</u> 06/09/11 19:41	Batch CF10817
Aroclor 1221	ND (0.0540)	10	1	06/09/11 19:41	CF10817
Aroclor 1232	ND (0.0540)	10	1	06/09/11 19:41	CF10817
Aroclor 1242	ND (0.0540)	10	1	06/09/11 19:41	CF10817
Aroclor 1248	ND (0.0540)	10	1	06/09/11 19:41	CF10817
Aroclor 1254	3.19 (0.270)	10	5	06/09/11 22:11	CF10817
Aroclor 1260	0.402 (0.0540)	10	1	06/09/11 19:41	CF10817
Aroclor 1262	ND (0.0540)	10	1	06/09/11 19:41	CF10817
Aroelor 1268	ND (0.0540)	10	1	06/09/11 19:41	CF10817

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	119 %		30-150
Surrogate: Decachlorobiphenyl [2C]	121 %		30-150
Surrogate: Tetrachloro-m-xylene	105 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	111 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-9 Date Sampled: 06/08/11 16:20

Percent Solids: 88 Initial Volume: 19.5 Final Volume: 10 Extraction Method: 3540

6/08/11 16:20 88

Analyst: IBM
Prepared: 6/8/11 18:10

ESS Laboratory Work Order: 1106094 ESS Laboratory Sample ID: 1106094-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

Analyte Aroclor 1016	Results (MRL) ND (0.0583)	<u>Limit</u> 10	<u>DF</u>	Analyzed Sequence 06/09/11 19:03	Batch CF10817
Aroclor 1221	ND (0.0583)	10	1	06/09/11 19:03	CF10817 CF10817
Aroclor 1232	ND (0.0583)	10	1	06/09/11 19:03	CF10817
Aroclor 1242	ND (0.0583)	10	1	06/09/11 19:03	CF10817
Aroclor 1248	ND (0.0583)	10	1	06/09/11 19:03	CF10817
Aroclor 1254	9.12 (0.583)	10	10	06/10/11 12:20	CF10817
Aroclor 1260	ND (0.0583)	10	1	06/09/11 19:03	CF10817
Aroclor 1262	ND (0.0583)	10	1	06/09/11 19:03	CF10817
Aroclor 1268	ND (0.0583)	10	1	06/09/11 19:03	CF10817

•	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	109 %		30-150
Surrogate: Decachlorobiphenyl [2C]	102 %		30-150
Surrogate: Tetrachloro-m-xylene	120 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	104 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106094

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

8082 Polychlorinated	Biphenyls	(PCB)
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Batch CF10817 - 3540									
Biank									
Aroclor 1016	ND	0.0500	mg/kg wet						
Aroclor 1221	ND	0.0500	mg/kg wet						
Aroclor 1232	ND	0.0500	mg/kg wet						
Aroclor 1242	ND	0.0500	mg/kg wet						
Arocior 1248	ND	0.0500	mg/kg wet						
Arocior 1254	ND	0,0500	mg/kg wet						
Arocior 1260	ND	0.0500	mg/kg wet						
Arocior 1262	ND	0.0500	mg/kg wet						
Aroclor 1268	ND	0.0500	mg/kg wet						
Surragate: Decachlorobiphenyl	0,0320		mg/kg wet	0.02500	128	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0298		mg/kg wet	0.02500	119	30-150			
Surragate: Tetrachloro-m-xylene	0.0283		mg/kg wet	0.02500	113	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0,0295		mg/kg wet	0.02500	118	30-150			
LCS						* *		*	
Aroclor 1016	0,627	0.0500	mg/kg wet	0.5000	125	40-140			
Arocior 1260	0.566	0.0500	mg/kg wet	0.5000	133	40-140			
Surrogate: Decachlorobiphenyl	0,0338		mg/kg wet	0.02500	135	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0310		mg/kg wet	0.02500	<i>124</i>	30-150			
Surrogate: Tetrachloro-m-xylene	0.0297		mg/kg wet	0.02500	119	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0,0292		mg/kg wet	0.02500	117	30-150			
LCS Dup									
Aroclor 1016	0,637	0.0500	mg/kg wet	0.5000	127	40-140	2	50	
Aroclor 1260	0,670	0,0500	mg/kg wet	0.5000	134	40-140	0.6	50	
Surrogate: Decachlorobiphenyl	0,0347		mg/kg wet	0.02500	139	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0318		mg/kg wet	0.02500	127	30-150			
Surrogate: Tetrachloro-m-xylene	0.0304		mg/kg wet	0.02500	122	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0300		mg/kg wet	0.02500	120	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106094

Notes and Definitions

\mathbf{U}	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
EL	Elevated Method Reporting Limits due to sample matrix (EL).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106094

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewehy
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Woodard & Curran Client Project ID: _____ Shipped/Delivered Via:

Client

ESS Project ID: 11060094
Date Project Due: 6/10/11 Days For Project: 2 Day

Items to be checked upon receipt:

Completed By: Reviewed By:_

 Air Bill Manifest Prese 	nt? *	No 10. Are t	ne samples propei	ly preserved:	Yes			
Air No.:			r sample containe		Yes			
Were Custody Seals P	resent?		ir bubbles in the		N/A			
3. Were Custody Seals I	ntact?		ng times exceeded		No			
4. Is Radiation count < :	LOO CPM?	fes 14. Suffic	ient sample volun	nes?	Yes			
5. Is a cooler present?			Subcontracting ne		No			
Cooler Temp: 4.3			SS labels on corre		Ves No			
Iced With: Ice		17. Were	samples received	intact?	Yes No			
6. Was COC included wit	h samples?		ple IDs:					
7. Was COC signed and	dated by client?	'es Sub Lab:			_			
8. Does the COC match	the sample		Analysis:					
9. Is COC complete and	correct?	es TAT:	TAT:					
18. Was there need to ca	all project manager t	o diseuss status?	If yes, please exp	lain.	Parameter S			
Who was called?:		By who	m?		·			
Sample Number	Properly Preserved	Container Type	# of Containers	Preservative				
1	Yes	4 oz Soil Jar	1	NP				
2 3	Yes Yes	4 oz Soil Jar 4 oz Soil Jar	1	NP NP				
4	Yes	4 oz Soil Jar	, 1	NP				

Date/Time:__

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	Division of I hielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Rev. (401) 461-4486	www.esslaboratory.com	**	3	ю. <u>Г</u>	GROVIDENCE	ر اي	. "	11819	= 89	11899	= <u> 8</u> 9	8 9	118	ल होडा इ	1189	6 हो प	6 हो।।	Se: F	'ط	,	7/	Relingfished by (Signature)	Refinquished by: (Signature)	*By circling MA-MCB, client acknowledges samples were collected in annual new with MADRP CAM VII A
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The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1106095

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director



Digitally signed by Laurel Stoddard Date: 2011.06.14 16:33:06 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106095

SAMPLE RECEIPT

The following samples were received on June 08, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	SampleName	<u>Matrix</u>	Analysis
1106095-01	SW-4	Soil	8082
1106095-02	SW-6	Soil	8082
1106095-03	SW-5	Soil	8082
1106095-04	SW-7	Soil	8082
1106095-05	VB-1	Soil	8082
1106095-06	VB-2	Soil	8082
1106095-07	VB-3	Soil	8082
1106095-08	VB-4	Soil	8082
1106095-09	VB-5	Soil	8082
1106095-10	VB-6	Soil	8082
1106095-11	VB-7	Soil	8082
1106095-12	VB-8	Soil	8082
1106095-13	VB-9	Soil	8082
1106095-14	VB-10	Soil	8082
1106095-15	VB-11	Soil	8082
1106095-16	VB-12	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

8082 Polychlorinated Biphenyls (PCB)

ESS Laboratory Work Order: 1106095

PROJECT NARRATIVE

1106095-01	Commonate weakensylies) diluted below the MEDI (CD)
1100093-01	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1106095-02	Surrogate recovery(ies) below lower control limit (S-).
	Tetrachloro-m-xylene (% @ 30-150%)
1106095-05	Percent difference between primary and confirmation results exceeds 40% (P).
	Aroclor 1254
1106095-06	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1106095-11	Surrogate recovery(ies) above upper control limit (S+).
	Decachlorobiphenyl [2C] (167% @ 30-150%)
1106095-15	Percent difference between primary and confirmation results exceeds 40% (P).
	Aroclor 1254

Percent difference between primary and confirmation results exceeds 40% (P).

No other observations noted.

End of Project Narrative.

1106095-16

DATA USABILITY LINKS

<u>Definitions of Quality Control Parameters</u>

Semivolatile Organics Internal Standard Information

Aroclor 1248

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-4

Date Sampled: 06/08/11 15:20

Percent Solids: 88 Initial Volume: 20.5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	i C			
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed S	Sequence	Batch
Aroclor 1016	ND (2.22)	10	40	06/13/11 10:52		CF10817
Aroclor 1221	ND (2.22)	10	40	06/13/11 10:52		CF10817
Aroclor 1232	ND (2.22)	10	40	06/13/11 10:52		CF10817
Aroclor 1242	ND (2.22)	10	40	06/13/11 10:52		CF10817
Aroclor 1248	43.6 (2.22)	10	40	06/13/11 10:52		CF10817
Aroclor 1254	ND (2.22)	10	40	06/13/11 10:52		CF10817
Aroclor 1260	ND (2.22)	10	40	06/13/11 10:52		CF10817
Aroclor 1262	ND (2.22)	10	40	06/13/11 10:52		CF10817
Aroclor 1268	ND (2.22)	10	40	06/13/11 10:52		CF10817

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SO	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



The Microbiology Division of Thiclsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-6 Date Sampled: 06/08/11 15:25

Percent Solids: 88 Initial Volume: 19.6 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

TXT		TATE	DE	_
KI	-	RES	DL	٩.

Analyte Aroclor 1016	Results (MRL) ND (0.232)	Limit 10	<u>DF</u> 4	Analyzed Sequence 06/10/11 11:42	Batch CF10817
	,				
Aroclor 1221	ND (0.232)	10	4	06/10/11 11:42	CF10817
Aroclor 1232	ND (0.232)	10	4	06/10/11 11:42	CF10817
Aroclor 1242	ND (0.232)	10	4	06/10/11 11:42	CF10817
Aroclor 1248	3.79 (0.232)	10	4	06/10/11 11:42	CF10817
Aroclor 1254	2.46 (0.232)	10	4	06/10/11 11:42	CF10817
Aroclor 1260	ND (0.232)	10	4	06/10/11 11:42	CF10817
Aroclor 1262	ND (0.232)	10	4	06/10/11 11:42	CF10817
Aroclor 1268	ND (0.232)	10	4	06/10/11 11:42	CF10817

Qualifier

	Mecovery	Qualities	LittiiCS
Surrogate: Decachlorobiphenyl	108 %		30-150
Surrogate: Decachlorobiphenyl [2C]	111 %		30-150
Surrogate: Tetrachloro-m-xylene	%	<i>5</i> -	30-150
Surrogate: Tetrachloro-m-xylene [2C]	106 %		30-150

Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: SW-5

Date Sampled: 06/08/11 16:10

Percent Solids:

87

Initial Volume: 19.6 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-03

Sample Matrix: Soil

Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

DI	_	DEC	DEC
K.	_	NL O	DEA

Limits

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.235)	10	4	06/10/11 22:59	CF10817
Aroclor 1221	ND (0.235)	10	4	06/10/11 22:59	CF10817
Aroclor 1232	ND (0.235)	10	4	06/10/11 22:59	CF10817
Aroclor 1242	ND (0.235)	10	4	06/10/11 22:59	CF10817
Aroclor 1248	0.859 (0.235)	10	4	06/10/11 22:59	CF10817
Aroclor 1254	2.44 (0.235)	10	4	06/10/11 22:59	CF10817
Aroclor 1260	ND (0.235)	10	4	06/10/11 22:59	CF10817
Aroclor 1262	ND (0.235)	10	4	06/10/11 22:59	CF10817
Aroclor 1268	ND (0.235)	10	4	06/10/11 22:59	CF10817

Qualifier

	, -	
Surrogate: Decachlorobiphenyl	104 %	30-150
Surrogate: Decachlorobiphenyl [2C]	117 %	30-150
Surrogate: Tetrachloro-m-xylene	<i>73 %</i>	30-150
Surrogate: Tetrachioro-m-xylene [2C]	90 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-7 Date Sampled: 06/08/11 16:15

Percent Solids: 9. Initial Volume: 20.5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

RI	_	RFS	DEC	

Limite

Analyte Aroclor 1016	Results (MRL)	<u>Limit</u>	$\frac{\mathbf{DF}}{4}$	Analyzed Sequence	Batch
Aroclor 1010	ND (0.208)	10	4	06/10/11 12:57	CF10817
Aroclor 1221	ND (0.208)	10	4	06/10/11 12:57	CF10817
Aroclor 1232	ND (0.208)	10	4	06/10/11 12:57	CF10817
Aroclor 1242	ND (0.208)	10	4	06/10/11 12:57	CF10817
Aroclor 1248	0.698 (0.208)	10	4	06/10/11 12:57	CF10817
Aroclor 1254	2.37 (0.208)	10	4	06/10/11 12:57	CF10817
Aroclor 1260	ND (0.208)	10	4	06/10/11 12:57	CF10817
Aroclor 1262	ND (0.208)	10	4	06/10/11 12:57	CF10817
Aroclor 1268	ND (0.208)	10	4	06/10/11 12:57	CF10817

Qualifier

	, or coording	Quannon	Limb
Surrogate: Decachlorobiphenyl	83 %		30-150
Surrogate: Decachlorobiphenyl [2C]	83 %		30-150
Surrogate: Tetrachloro-m-xylene	65 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	67 %		30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: VB-1

Date Sampled: 06/08/11 16:23

Percent Solids:

95

Initial Volume: 19.8 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-05

Sample Matrix: Soil Units: mg/kg dry

Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

			RI - RES D	EC	·	
<u>Analyte</u>	Results (MRL)		<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.213)		10	4	06/10/11 13:35	CF10817
Aroclor 1221	ND (0.213)		10	4	06/10/11 13:35	CF10817
Aroclor 1232	ND (0.213)		10	4	06/10/11 13:35	CF10817
Aroclor 1242	ND (0.213)		10	4	06/10/11 13:35	CF10817
Aroclor 1248	0.615 (0.213)		10	4	06/10/11 13:35	CF10817
Aroclor 1254	P 0.873 (0.213)		10	4	06/10/11 13:35	CF10817
Aroclor 1260	ND (0.213)		10	4	06/10/11 13:35	CF10817
Aroclor 1262	ND (0.213)		10	4	06/10/11 13:35	CF10817
Aroclor 1268	ND (0.213)		10	4	06/10/11 13:35	CF10817
	%Recovery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl	127 %		30-150			
Surrogate: Decachlorobiphenyl [2C]	121 04		20.150			

Surrogate: Decachloroblphenyl	127 %	30-150
Surrogate: Decachlorobiphenyl [2C]	121 %	30-150
Surrogate: Tetrachloro-m-xylene	84 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	96 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: VB-2

Date Sampled: 06/08/11 16:25

Percent Solids:

92

Initial Volume: 19.6

Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-06

Sample Matrix: Soil Units: mg/kg dry

Analyst: IBM

Prepared: 6/9/11 15:00

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Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (2.22)	10	40	06/13/11 11:11	CF10817
Aroclor 1221	ND (2.22)	10	40	06/13/11 11:11	CF10817
Aroclor 1232	ND (2.22)	10	40	06/13/11 11:11	CF10817
Aroclor 1242	ND (2.22)	10	40	06/13/11 11:11	CF10817
Aroclor 1248	23.3 (2.22)	10	40	06/13/11 11:11	CF10817
Aroclor 1254	ND (2.22)	10	40	06/13/11 11:11	CF10817
Aroclor 1260	ND (2.22)	10	40	06/13/11 11:11	CF10817
Aroclor 1262	ND (2.22)	10	40	06/13/11 11:11	CF10817
Aroclor 1268	ND (2.22)	10	40	06/13/11 11:11	CF10817

	%Recovery	Qualifier	Limits
Surrogate; Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: VB-3

Date Sampled: 06/08/11 16:28

Percent Solids:

: 91

Initial Volume: 19.9 Final Volume: 10

Extraction Method: 3540

Surrogate: Tetrachloro-m-xylene [2C]

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-07

Sample Matrix: Soil

Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

				RI - RES D	EC		
Analyte Aroclor 1016	Results (MRL) ND (0.221)			<u>Limit</u> 10	<u>DF</u> 4	Analyzed Sequen	ce Batch CF10817
Aroclor 1221	ND (0.221)			10	4	06/10/11 14:50	CF10817 CF10817
Aroclor 1232	ND (0.221)			10	4	06/10/11 14:50	CF10817
Aroclor 1242	ND (0.221)			10	4	06/10/11 14:50	CF10817
Aroclor 1248	0.339 (0.221)			10	4	06/10/11 14:50	CF10817
Aroclor 1254	0.729 (0.221)			10	4	06/10/11 14:50	CF10817
Aroclor 1260	ND (0.221)			10	4	06/10/11 14:50	CF10817
Aroclor 1262	ND (0.221)			10	4	06/10/11 14:50	CF10817
Aroclor 1268	ND (0.221)			10	4	06/10/11 14:50	CF10817
***************************************	%R	Recovery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl		103 %		30-150			
Surrogate: Decachlorobiphenyl [2C]		100 %		30-150			
Surrogate: Tetrachioro-m-xylene		68 %		30-150			

30-150

72 %



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-4 Date Sampled: 06/08/11 16:30

Percent Solids: 90 Initial Volume: 20.1

Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-08

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

RI-RES DEC

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.221)	Limit	<u>DF</u> 4	Analyzed Sequence	Batch CF10817
Aroclor 1221	ND (0.221)	10	4	06/10/11 15:28	CF10817
Aroclor 1232	ND (0.221)	10	4	06/10/11 15:28	CF10817
Aroclor 1242	ND (0.221)	10	4	06/10/11 15:28	CF10817
Aroclor 1248	0.300 (0.221)	10	4	06/10/11 15:28	CF10817
Aroclor 1254	0.851 (0.221)	10	4	06/10/11 15:28	CF10817
Aroclor 1260	ND (0.221)	10	4	06/10/11 15:28	CF10817
Aroclor 1262	ND (0.221)	10	4	06/10/11 15:28	CF10817
Aroclor 1268	ND (0.221)	10	4	06/10/11 15:28	CF10817

Qualifier

Surrogate: Decachlorobiphenyl	114 %	30-150
Surrogate: Decachlorobiphenyi [2C]	108 %	30-150
Surrogate: Tetrachloro-m-xylene	<i>89 %</i>	30-150
Surrogate: Tetrachioro-m-xylene [2C]	97 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: VB-5

Date Sampled: 06/08/11 16:33

Percent Solids: 39 Initial Volume: 19.7

Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-09

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	CC			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.521)	10	4	06/10/11 16:05		CF10817
Aroclor 1221	ND (0.521)	10	4	06/10/11 16:05		CF10817
Aroclor 1232	ND (0.521)	10	4	06/10/11 16:05		CF10817
Aroclor 1242	ND (0.521)	10	4	06/10/11 16:05		CF10817
Aroclor 1248	ND (0.521)	10	4	06/10/11 16:05		CF10817
Aroclor 1254	0.612 (0.521)	10	4	06/10/11 16:05		CF10817
Aroclor 1260	ND (0.521)	10	4	06/10/11 16:05		CF10817
Aroclor 1262	ND (0.521)	10	4	06/10/11 16:05		CF10817
Aroclor 1268	ND (0.521)	10	4	06/10/11 16:05		CF10817

Qualifier

Limits

	•	
Surrogate: Decachlorobiphenyl	120 %	30-150
Surrogate: Decachlorobiphenyl [2C]	119 %	30-150
Surrogate: Tetrachloro-m-xylene	100 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	94 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-6

Date Sampled: 06/08/11 16:35

Percent Solids:

83

Initial Volume: 20.3 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-10

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

ÐТ		\mathbf{RE}	C I	NT	•
RI	••	R.F.		JJP.	τ.

Analyte Arocior 1016	Results (MRL) ND (0.237)	Limit	<u>DF</u> 4	<u>Analyzed</u> <u>Sequence</u> 06/10/11 16:43	Batch CF10817
Aroclor 1221	ND (0.237)	10	4	06/10/11 16:43	CF10817
Aroclor 1232	ND (0.237)	10	4	06/10/11 16:43	CF10817
Aroclor 1242	ND (0.237)	10	4	06/10/11 16:43	CF10817
Aroclor 1248	2.27 (0.237)	10	4	06/10/11 16:43	CF10817
Aroclor 1254	4.00 (0.237)	10	4	06/10/11 16:43	CF10817
Arocior 1260	ND (0.237)	10	4	06/10/11 16:43	CF10817
Aroclor 1262	ND (0.237)	10	4	06/10/11 16:43	CF10817
Aroclor 1268	ND (0.237)	10	4	06/10/11 16:43	CF10817

	**************************************	Qualifier	Limits
Surrogate: Decachlorobiphenyl	90 %		30-150
Surrogate: Decachlorobiphenyl [2C]	125 %		30-150
Surrogate: Tetrachloro-m-xylene	53 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	<i>64</i> %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: VB-7

Date Sampled: 06/08/11 16:38

Percent Solids: 82

Initial Volume: 19.9 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-11

Sample Matrix: Soil

Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES D	EC		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.245)	10	4	06/10/11 19:14	CF10817
Aroclor 1221	ND (0.245)	10	4	06/10/11 19:14	CF10817
Aroelor 1232	ND (0.245)	10	4	06/10/11 19:14	CF10817
Aroclor 1242	ND (0.245)	10	4	06/10/11 19:14	CF10817
Aroclor 1248	0.564 (0.245)	10	4	06/10/11 19:14	CF10817
Aroclor 1254	1.47 (0.245)	10	4	06/10/11 19:14	CF10817
Aroclor 1260	ND (0.245)	10	4	06/10/11 19:14	CF10817
Aroclor 1262	ND (0.245)	10	4	06/10/11 19:14	CF10817
Aroclor 1268	ND (0.245)	10	4	06/10/11 19:14	CF10817

Qualifier

Limits

Surrogate: Decachlorobiphenyl	132 %		30-150
Surrogate: Decachlorobiphenyl [2C]	167 %	<i>5+</i>	30-150
Surrogate: Tetrachloro-m-xylene	76 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	<i>79</i> %		30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-8 Date Sampled: 06/08/11 16:41

Percent Solids: 84 Initial Volume: 19.6 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-12

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

RI -	RES	DEC
------	-----	-----

Analyte Aroclor 1016	<u>Results (MRL)</u> ND (0.243)	<u>Limit</u> <u>DF</u> 10 4	Analyzed Sequence 06/10/11 19:51	<u>Batch</u> CF10817
Aroclor 1221	ND (0.243)	10 4	06/10/11 19:51	CF10817
Aroclor 1232	ND (0.243)	10 4	06/10/11 19:51	CF10817
Aroclor 1242	ND (0.243)	10 4	06/10/11 19:51	CF10817
Aroclor 1248	1.08 (0.243)	10 4	06/10/11 19:51	CF10817
Aroclor 1254	2.57 (0.243)	10 4	06/10/11 19:51	CF10817
Aroclor 1260	ND (0.243)	10 4	06/10/11 19:51	CF10817
Aroclor 1262	ND (0.243)	10 4	06/10/11 19:51	CF10817
Aroclor 1268	ND (0.243)	10 4	06/10/11 19:51	CF10817

-	%Recovery	Qualifier	Limits
Surrogate: Decachiorobiphenyl	80 %		30-150
Surrogate: Decachlorobiphenyl [2C]	91 %		30-150
Surrogate: Tetrachloro-m-xylene	67 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	69 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: VB-9

Date Sampled: 06/08/11 16:44

Percent Solids:

77

Initial Volume: 19.6 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-13

Sample Matrix: Soil

Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

RI - RES DEC					
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.265)	10	4	06/10/11 20:29	CF10817
Aroclor 1221	ND (0.265)	10	4	06/10/11 20:29	CF10817
Aroclor 1232	ND (0.265)	10	4	06/10/11 20:29	CF10817
Aroclor 1242	ND (0.265)	10	4	06/10/11 20:29	CF10817
Aroclor 1248	1.44 (0.265)	10	4	06/10/11 20:29	CF10817
Aroclor 1254	ND (0.265)	10	4	06/10/11 20:29	CF10817
Aroclor 1260	ND (0.265)	10	4	06/10/11 20:29	CF10817
Aroclor 1262	ND (0.265)	10	4	06/10/11 20:29	CF10817
Aroclor 1268	ND (0.265)	10	4	06/10/11 20:29	CF10817
	%Recovery Qualifie	r Limits			

Surrogate: Decachlorobiphenyl	123 %	30-150
Surrogate: Decachlorobiphenyl [2C]	113 %	30-150
Surrogate: Tetrachloro-m-xylene	67 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	<i>77</i> %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-10 Date Sampled: 06/08/11 16:47

Percent Solids: Initial Volume: 20 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-14

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

RI	T	Œ	C	ы	~~

Limits

		IG - IGD D.	EC .		
Analyte Aroclor 1016	<u>Results (MRL)</u> ND (0.222)	<u>Limit</u> 10	<u>DF</u> 4	Analyzed Sequence 06/10/11 21:07	Batch CF10817
Aroclor 1221	ND (0.222)	10	4	06/10/11 21:07	CF10817
Aroclor 1232	ND (0.222)	10	4	06/10/11 21:07	CF10817
Aroclor 1242	ND (0.222)	10	4	06/10/11 21:07	CF10817
Aroclor 1248	ND (0.222)	10	4	06/10/11 21:07	CF10817
Aroclor 1254	ND (0.222)	10	4	06/10/11 21:07	CF10817
Aroclor 1260	ND (0.222)	10	4	06/10/11 21:07	CF10817
Aroclor 1262	ND (0.222)	10	4	06/10/11 21:07	CF10817
Aroclor 1268	ND (0.222)	10	4	06/10/11 21:07	CF10817

Qualifier

Surrogate: Decachlorobiphenyl	124 %	30-150
Surrogate: Decachiorobiphenyl [2C]	119 %	30-150
Surrogate: Tetrachloro-m-xylene	94 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	90 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-11 Date Sampled: 06/08/11 16:49

Percent Solids: 87 Initial Volume: 20.3 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-15

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

RI - RES DEC

<u>Analyte</u>	<u>Results (MRL)</u>			<u>Limit</u>	$\underline{\mathbf{DF}}$	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.226)			10	4	06/10/11 21:44	CF10817
Aroclor 1221	ND (0.226)			10	4	06/10/11 21:44	CF10817
Aroclor 1232	ND (0.226)			10	4	06/10/11 21:44	CF10817
Aroclor 1242	ND (0.226)			10	4	06/10/11 21:44	CF10817
Arocior 1248	1.70 (0.226)			10	4	06/10/11 21:44	CF10817
Aroclor 1254	P 2.99 (0.226)			10	4	06/10/11 21:44	CF10817
Aroclor 1260	ND (0.226)			10	4	06/10/11 21:44	CF10817
Aroclor 1262	ND (0.226)			10	4	06/10/11 21:44	CF10817
Aroclor 1268	ND (0.226)			10	4	06/10/11 21:44	CF10817
	96	Recovery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl		104 %		30-150			
Surrogate: Decachlorobiphenyl [2C]		110 %		30-150			
Surrogate: Tetrachloro-m-xylene		59 %		30-150			
Surrogate: Tetrachloro-m-xylene [2C]		74 %		30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-12 Date Sampled: 06/08/11 16:53

Percent Solids: 89
Initial Volume: 19.9
Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106095 ESS Laboratory Sample ID: 1106095-16

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 15:00

8082 Polychlorinated Biphenyls (PCB)

TOT	DEC	TYPE
RI	- RES	DEC

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.226)	Limit 10	<u>DF</u> 4	Analyzed Sequence 06/10/11 22:22	Batch CF10817
Aroclor 1221	ND (0.226)	10	4	06/10/11 22:22	CF10817
Aroclor 1232	ND (0.226)	10	4	06/10/11 22:22	CF10817
Aroclor 1242	ND (0.226)	10	4	06/10/11 22:22	CF10817
Aroclor 1248	P 1.24 (0.226)	10	4	06/10/11 22:22	CF10817
Aroclor 1254	1.80 (0.226)	10	4	06/10/11 22:22	CF10817
Aroclor 1260	ND (0.226)	10	4	06/10/11 22:22	CF10817
Aroclor 1262	ND (0.226)	10	4	06/10/11 22:22	CF10817
Aroclor 1268	ND (0.226)	10	4	06/10/11 22:22	CF10817

Qualifier

Surrogate: Decachlorobiphenyl	<i>95 %</i>	30-150
Surrogate: Decachlorobiphenyl [2C]	94 %	30-150
Surrogate: Tetrachloro-m-xylene	40 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	84 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106095

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										

Batch CF10817 - 3540									
Blank									
Aroclor 1016	ND ND	0.0500	mg/kg wet						
Aroclor 1221	ND	0.0500	mg/kg wet						
Aroclor 1232	ND	0.0500	mg/kg wet						
Aroclor 1242	ND	0.0500	mg/kg wet						
Aroclor 1248	ND	0.0500	mg/kg wet						
Aroclor 1254	ND	0.0500	mg/kg wet						
Aroclor 1260	NĐ	0.0500	mg/kg wet						
Arocior 1262	ND	0.0500	mg/kg wet						
Areclor 1268	ND	0.0500	mg/kg wet						
Surrogate: Decachiorobiphenyl	0.0320		mg/kg wet	0.02500	128	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0298		mg/kg wet	0.02500	119	30-150			
Surrogate: Tetrachloro-m-xylene	0.0283		mg/kg wet	0.02500	113	<i>30-150</i>			
Surrogate: Tetrachloro-m-xylene [2C]	0.0295		mg/kg wet	0.02500	118	30-150			
LCS									
Aroclor 1016	0.627	0.0500	mg/kg wet	0.5000	125	40-140			
Aracler 1260	0.566	0.0500	mg/kg wet	0.5000	133	40-140			
Surrogate: Decachlorobiphenyl	0.0338		mg/kg wet	0.02500	135	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0310		mg/kg wet	0.02500	124	30-150			
Surrogate: Tetrachloro-m-xylene	0.0297		mg/kg wet	0.02500	119	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0292		mg/kg wet	0.02500	117	30-150			
LCS Dup			***************************************			•			
Aroclor 1016	0.637	0,0500	mg/kg wet	0.5600	127	40-140	2	50	
Araclor 1260	0.670	0.0500	mg/kg wet	0.5000	134	40-140	0.6	50	
Surrogate: Decachlorobiphenyl	0.0347		mg/kg wet	0.02500	139	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0318		mg/kg wet	0.02500	127	30-150			
Surrogate: Tetrachloro-m-xylene	0.0304		mg/kg wet	0.02500	122	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0300		mg/kg wet	0.02500	120	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

[CALC] Calculated Analyte

ESS Laboratory Work Order: 1106095

Notes and Definitions

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
S+	Surrogate recovery(ies) above upper control limit (S+).
S-	Surrogate recovery(ies) below lower control limit (S-).
P	Percent difference between primary and confirmation results exceeds 40% (P).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106095

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewehy
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client:	Woodard	& Curran	
Client P	roject ID:		
Shipped	I/Delivered	d Via:	<u>Client</u>

ESS Project ID: 11060095
Date Project Due: 6/15/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved:	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: 4.3		16. Are ESS labels on correct containers?	Yes No
Iced With: Ice		17. Were samples received intact?	Ves No
6. Was COC included with samples?	Yes	ESS Sample IDs:	_
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	<u> </u>
9. Is COC complete and correct?	Yes	TAT:	_
18. Was there need to call project manag	er to discu	uss status? If yes, please explain.	
Who was called?:		By whom?	

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative	
1	Yes	4 oz Soil Jar	1	NP	
2	Yes	4 oz Soil Jar	1	ΝP	·
3	Yes	4 oz Soil Jar	1	NP	
4	Yes	4 oz Soil Jar	1	NP	
5	Yes	4 oz Soil Jar	1	NP	
6	Yes	4 oz Soil Jar	1	NP	
7	Yes	4 oz Soil Jar	1	NP	
8	Yes	4 oz Soil Jar	1	NP	
9	Yes	4 oz Soil Jar	1	NP	
10	Yes	4 oz Soil Jar	1	NP	
11	Yes	4 oz Soil Jar	1	NP	
12	Yes	4 oz Soil Jar	1	NP	
13	Yes	4 oz Soil Jar	1	NP	
14	Yes	4 oz Soil Jar	1	NP	
15	Yes	4 oz Soil Jar	1	NP	
16	Yes	4 oz Soil Jar	/ / 1	NP	
Completed By:	MK D	ate/Time: 6	18111		
Reviewed By:	Ø D	ate/Time: 6/7	Th		

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Electronic Deliverable

Other

Reporting Limits

liurn Time Standard Other 255H 48 hax Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 ESS Laboratory www.esslaboratory.com

Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wrpes F-Filters Other 3 SC X Circle and/orWrite Required Analysis PDF_ MCP-METALS (13) WELVE? (13) WCb-Access NBC7 TCLP-RCRA8 ES.TAT. $_{\rm FP13}$ **RCRA8 RCRAS** YOAS 0278 0Z28 579 Format: Excel___ HAG 809 FCB 608 enicides 8087 1CB resticides X × 1808 \geq × olo PAH EPH 4 Diesel Hbyth. 801\$ D¥O 0018 H9T HdV HqV 68O 801≨ WLBE/BLEX 8051 0928 NO4 2.428 779 Type of Containers J ر۔ ථ 9 J J ٥ 2 0 Number of Containers Other Pres State what camples were collected from:

MA (RI) CT NH NJ NY ME

Is this project for any of the following:

MA-MCP Navy USACE Project Name (20 Chan or less) SAFETY KIEEL Sample Identification (20 Char. or less) Email Address Ø Address CEOM \$2403 ろうの 3,4% ーつぶ 200 アプラ 4.3 5.35 X |S | VB-2 なるな S 1 VB-1 Project # 5087 1 S MATRIX S S S V 7 × CEVE COMP ¥ \$ State P.T. Collection Time Sico 1520 **S7S** 1625 1505 1623 38 019 1620 519 Date = 89 11/8/0 = 8 9 =|8|9 PROVIDENCE 三<u></u> 図り 6811 100 <u>। शि</u> 4Ó. 273. JOST 6811 18 9 Abadeed TANGELLE Felephone # Co. Name Sample.# ESS LAB

*By circling MA-MCB, dient acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

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Date/Time

eceived by: (Signature)

Well 1715

Sched by Stanature)

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Date/Time

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What

SAD EXTERCITOR

4113

Comments: 3082

[] Technicians_

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Cooler Temp:

Preservation Code 1-NP, 2-HC1, 3-HSO., 4-HNO., 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-

Sampled by: CENT DOKOL

Internal Use Only

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 X_{k_n}

Cooler Present

Seals Intact

[] Pickup

No NA.X

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

10/26/04 B

Page 24 of 25

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Date/Time

inquished by: (Signature)

*By circling MA-MCB, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

Page 25 of 25

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The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1106124

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard Laboratory Director 188

Digitally signed by Laurel Stoddard Date: 2011.06.13 16:28:35 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106124

SAMPLE RECEIPT

The following samples were received on June 09, 2011 for the analyses specified on the enclosed Chain of Custody Record.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	Analysis
1106124-01	SW-18	Soil	8082
1106124-02	SW-19	Soil	8082
1106124-03	SW-12	Soil	8082
1106124-04	Dup-SW-19	Soil	8082
1106124-05	SW-23	Soil	8082
1106124-06	SW-24	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106124

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-18 Date Sampled: 06/09/11 16:11

Percent Solids: Initial Volume: 5.5 Final Volume: 10 Extraction Method: 3540

93

ESS Laboratory Work Order: 1106124 ESS Laboratory Sample ID: 1106124-01 Sample Matrix: Soil

Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 18:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	EC		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.196)	10	1	06/11/11 0:34	CF10922
Aroclor 1221	ND (0.196)	10	1	06/11/11 0:34	CF10922
Aroclor 1232	ND (0.196)	10	1	06/11/11 0:34	CF10922
Aroclor 1242	ND (0.196)	10	1	06/11/11 0:34	CF10922
Aroclor 1248	1.42 (0.196)	10	1	06/11/11 0:34	CF10922
Aroclor 1254	3.07 (0.196)	10	1	06/11/11 0:34	CF10922
Aroclor 1260	ND (0.196)	10	1	06/11/11 0:34	CF10922
Aroclor 1262	ND (0.196)	10	1	06/11/11 0:34	CF10922
Aroclor 1268	ND (0.196)	10	1	06/11/11 0:34	CF10922

Qualifier

Limits

Surrogate: Decachlorobiphenyl	97 %	30-150
Surrogate: Decachlorobiphenyl [ZC]	108 %	30-150
Surrogate: Tetrachloro-m-xylene	63 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	94 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-19 Date Sampled: 06/09/11 16:47

Percent Solids: 92 Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106124 ESS Laboratory Sample ID: 1106124-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 18:30

RI - F	RES	DEC
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		*** ****			
Analyte Aroclor 1016	Results (MRL)	Limit	<u>DF</u>	<u>Analyzed</u> <u>Sequence</u> 06/11/11 1:11	Batch
Aroclor 1221	ND (0.213) ND (0.213)	10	1	06/11/11 1:11	CF10922 CF10922
Aroclor 1232	ND (0.213)	10	I	06/11/11 1:11	CF10922
Aroclor 1242	ND (0.213)	10	1	06/11/11 1:11	CF10922
Aroclor 1248	ND (0.213)	10	1	06/11/11 1:11	CF10922
Aroclor 1254	ND (0.213)	10	1	06/11/11 1:11	CF10922
Aroclor 1260	ND (0.213)	10	1	06/11/11 1:11	CF10922
Aroclor 1262	ND (0.213)	10	1	06/11/11 1:11	CF10922
Aroclor 1268	ND (0.213)	10	1	06/11/11 1:11	CF10922

	MINECOVERY	Quamici	LIIIIG
Surrogate: Decachlorobiphenyl	102 %		30-150
Surrogate: Decachlorobiphenyl [2C]	104 %		30-150
Surrogate: Tetrachloro-m-xylene	103 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	108 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-12 Date Sampled: 06/09/11 15:20

Percent Solids: 87 Initial Volume: 5 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106124 ESS Laboratory Sample ID: 1106124-03

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 18:30

8082 Polychlorinated Biphenyls (PCB)

RI		D	FS	ъ	
13.1	_	т			T

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.230)	Limit 10	<u>DF</u>	Analyzed Sequence 06/11/11 3:23	Batch CF10922
Aroclor 1221	ND (0.230)	10	1	06/11/11 3:23	CF10922
Aroclor 1232	ND (0.230)	10	1	06/11/11 3:23	CF10922
Aroclor 1242	ND (0.230)	10	1	06/11/11 3:23	CF10922
Aroclor 1248	1.51 (0.230)	10	1	06/11/11 3:23	CF10922
Aroclor 1254	2.39 (0.230)	10	1	06/11/11 3:23	CF10922
Aroclor 1260	ND (0.230)	10	1	06/11/11 3:23	CF10922
Aroclor 1262	ND (0.230)	10	1	06/11/11 3:23	CF10922
Aroclor 1268	ND (0.230)	10	1	06/11/11 3:23	CF10922

Qualifier

Surrogate: Decachlorobiphenyl	113 %	30-150
Surrogate: Decachlorobiphenyl [2C]	113 %	30-150
Surrogate: Tetrachloro-m-xylene	101 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	108 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: Dup-SW-19 Date Sampled: 06/09/11 16:47

Percent Solids: Initial Volume: 5

Final Volume: 10 Extraction Method: 3540

ESS Laboratory Work Order: 1106124 ESS Laboratory Sample ID: 1106124-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 18:30

8082 Polychlorinated Biphenyls (PCB)

RI	_	RI	FS.	n	$\mathbf{F}C$

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.211)	<u>Limit</u> 10	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> <u>Sequence</u> 06/11/11 4:01	Batch CF10922
Aroclor 1221	ND (0.211)	10	1	06/11/11 4:01	CF10922 CF10922
Aroclor 1232	ND (0.211)	10	1	06/11/11 4:01	CF10922
Aroclor 1242	ND (0.211)	10	1	06/11/11 4:01	CF10922
Aroclor 1248	ND (0.211)	10	1	06/11/11 4:01	CF10922
Aroclor 1254	ND (0.211)	10	1	06/11/11 4:01	CF10922
Aroclor 1260	ND (0.211)	10	1	06/11/11 4:01	CF10922
Aroclor 1262	ND (0.211)	10	1	06/11/11 4:01	CF10922
Aroclor 1268	ND (0.211)	10	1	06/11/11 4:01	CF10922

Qualifier

Surrogate: Decachlorobiphenyl	100 %	30-150
Surrogate: Decachlorobiphenyl [2C]	101 %	30-150
Surrogate: Tetrachloro-m-xylene	106 %	30-150
Surrogate: Tetrachioro-m-xylene [2C]	109 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-23 Date Sampled: 06/09/11 16:59

Percent Solids: 92 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106124 ESS Laboratory Sample ID: 1106124-05

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 18:30

		RI - RES DE	EC .		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Seque	nce Batch
Aroclor 1016	ND (0.213)	10	1	06/11/11 4:38	CF10922
Aroclor 1221	ND (0.213)	10	1	06/11/11 4:38	CF10922
Aroclor 1232	ND (0.213)	10	1	06/11/11 4:38	CF10922
Aroclor 1242	ND (0.213)	10	1	06/11/11 4:38	CF10922
Aroclor 1248	7.30 (1.07)	10	5	06/13/11 11:30	CF10922
Aroclor 1254	13.2 (1.07)	10	5	06/13/11 11:30	CF10922
Aroclor 1260	ND (0.213)	10	1	06/11/11 4:38	CF10922
Aroclor 1262	ND (0.213)	10	1	06/11/11 4:38	CF10922
Aroclor 1268	ND (0.213)	10	1	06/11/11 4:38	CF10922

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	99 %		30-150
Surrogate: Decachlorobiphenyl [2C]	95 %		30-150
Surrogate: Tetrachloro-m-xylene	80 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	85 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-24 Date Sampled: 06/09/11 17:02

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106124 ESS Laboratory Sample ID: 1106124-06

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/9/11 18:30

RI -	RES	DEC
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Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.215)	10	1	06/11/11 5:16	CF10922
Aroclor 1221	ND (0.215)	10	1	06/11/11 5:16	CF10922
Aroclor 1232	ND (0.215)	10	I	06/11/11 5:16	CF10922
Aroclor 1242	ND (0.215)	10	1	06/11/11 5:16	CF10922
Aroclor 1248	1.48 (0.215)	10	1	06/11/11 5:16	CF10922
Aroclor 1254	6.25 (0.431)	10	2	06/13/11 11:49	CF10922
Aroclor 1260	ND (0.215)	10	1	06/11/11 5:16	CF10922
Aroclor 1262	ND (0.215)	10	1	06/11/11 5:16	CF10922
Aroclor 1268	ND (0.215)	10	1	06/11/11 5:16	CF10922

	Mecovery	Quanner	LIIIICS
Surrogate: Decachlorobiphenyl	96 %		30-150
Surrogate: Decachlorobiphenyl [2C]	97 %		30-150
Surrogate: Tetrachloro-m-xylene	92 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	95 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106124

Quality Control Data

Spike Source %REC RPD Analyte Result MRL Units Level Result %REC Limits RPD Limit Qualifier	 									
				Spike	Source		%REC		RPD	
	Result	MRL	Units			%REC	Limits	RPD	Limit	Qualifier

Batch CF10922 - 3540						11111111			
Biank			•						
Aroclor 1016	ND	0.0500	mg/kg wet						
Aroclor 1221	ND	0.0500	mg/kg wet						
Aroclot 1232	ND	0,0500	mg/kg wet						
Aroclor 1242	ND	0.0500	mg/kg wet						
Aroclor 1248	ND	0.0500	mg/kg wet						
Aroclor 1254	ND	0.0500	mg/kg wet						
Arodar 1260	ND	0.0500	mg/kg wet						
Arodor 1262	ND	0.0500	mg/kg wet						
Aroclor 1268	ND	0,0500	mg/kg wet						
Surrogate: Decachlorobiphenyl	0.0287		mg/kg wet	0.02500	115	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0271		mg/kg wet	0.02500	108	30-150			
Surrogate: Tetrachloro-m-xylene	. 0.0233		mg/kg wet	0.02500	93	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0244		mg/kg wet	0.02500	98	30-150			
LCS						****	·		
Arocior 1016	0.631	0.0500	mg/kg wet	0.5000	126	40-140			
Aroclor 1260	0.676	0.0500	mg/kg wet	0.5000	135	40-140			
Surrogate: Decachlorobiphenyl	0.0305		mg/kg wet	0.02500	122	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0284		mg/kg wet	0.02500	114	30-150			
Surrogate: Tetrachloro-m-xylene	0.0261		mg/kg wet	0.02500	105	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0256		mg/kg wet	0.02500	103	30-150			
LCS Dup	4VIII 2. III.								
Aroclor 1016	0.664	0.0500	mg/kg wet	0.5000	133	40-140	5	50	
Arodor 1260	0.708	0.0500	mg/kg wet	0.5000	142	40-140	4	50	
Surrogate: Decachlorobiphenyl	0.0312		rng/kg wet	0.02500	125	30-150			
Surrogate: Decachlorobiphenyl [2C]	0,0294		mg/kg wet	0.02500	117	30-150			
Surrogate: Tetrachloro-m-xylene	0,0278		mg/kg wet	0.02500	111	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0273		mg/kg wet	0.02500	109	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106124

Notes and Definitions

U	Analyte included in the analysis, but not detected
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte

Quality



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106124

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client:	Woodard &	Curran	
Client P	roject ID: _		
Shipped	I/Delivered \	∕ia:	<u>Client</u>

ESS Project ID: 11060124
Date Project Due: 6/13/11
Days For Project: 2 Day

Items to be checked upon receipt:

Completed By:

Reviewed By:

Who was called?:	Properly Preserved	Conta	iner Type	# of (Containers	Preservative	
			By who	m?			
9. Is COC complete and a		Yes to discu	TAT:	/		ain.	
Was COC signed and oneDoes the COC match	· · ·	Yes Yes	Sub Lab: . Analysis: .				
5. Was COC Included wit	F	Yes	·			/	
Cooler Temp: 4.6 Iced With: Ice	- I				s on correct received	ct containers intact?	Yes No
5. Is a cooler present?		Yes	•		acting nee		No
1. Is Radiation count < 1		/es	14. Suffici	ent san	nple volum	es?	Yes
3. Were Custody Seals In		N/A	-		exceeded		No
Air No.: 2. Were Custody Seals Pr	resent?	No	11. Proper12. Any air				N/A
			# # B			- usad3	Yes

Date/Time:_

ESS Laborator	atory		CHAIN			OF CUSTODY	OL	χ(Page	e L of	W
Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211	ngineering, Inc. Franston, RI 0291	<u> </u>	Hurn Time Stays, prior approval by Jaboratory is required # State where samples were collected from:	urd Other al by laboratory i d from:	r & & A	. ##	Reportu	Reporting Limits	ESSE	LAB PROJEC 0612	₽ J
lel. (401) 461-/181 F www.esslaboratory.com	rax (401) 461-4486 n		MA (RD CT NH NJ NY ME Is this project for any of the following: MA-MCP Navy	NY ME wing:	Other Other		Electronic Deliv Format: Excel	[era]	ble Yes_ Access_PDF_	NoOther	
Co. Name		Project #	Project Name (20 Chan or less)	or less)			Ü	rcle and/orW	Circle and/orWrite Required Analysis	nalvsis	
Norders & Curren	- AAD-	219303	Safery Meery								
Contact Person		Address 95 Cana			S.	2. 2 .2 Hay	Hd. Hd.	809	,		-
City Rovidence	**************************************	Zip O2503				, SI S J ⁄	N E BKO 8012	808 Pesticides	HJM LEW-dDI LBC LBC E144		
Telephone # 401 273 1007	Fax #	273 5087	Email Address	***************************************		08 79 (8100 Het Het	(8082)	8 F Y		
1	Collection Time	1	ple Identification (20 Char. or less)	g sər4	Code Number	Type of T 6268 600 1208	MTRE/BT	8081 Periodes SVOVS	METALS (TCLP-RCF		
10 Color	KS46 X	1 5 3-16</td <td>9</td> <td></td> <td>_5</td> <td></td> <td></td> <td>×</td> <td></td> <td></td> <td></td>	9		_5			×			
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11/19/	8031	[1-WS S X			1 6			×			
(ga) 1	אפנו	K S SW-18	သ		9			メ	Œ) }	
mples (t sool	X S DUP-SW	21-0		<u>9</u>			×			
- Glalu	1605 X	1 S MS-SW-	21-15		7			×			
1 619 h	lkoS ×	CR-05H 8 7	21-CJ		- 0			×			
(Jahin	1644	1 SW-16	PANAMANAL PARAMANANA	-	<u>5</u>	B		×			
00 6911	1647 >	X S SW-19	**		. I G			¥	Ø	C\$54	
Container Type: P-Poly G-G	G-Glass S-Sterile V-VOA	Matrix: S-Soil SD-Solid	olid D-Sludge WW-Waste Water		GW-Ground Water		face Water	SW-Surface Water DW-Drinking Water		O-Oil W-Wipes	F-Filters
Cooler Present XYes	No In	Internal Use Only	Preservation Code 1- NP, 3	1- NP, 2- HCI, 3- H.SO., 4- HNO.,	Ot, 4- HN)3, 5- NaO	H, 6- MeC	5- NaOH, 6- MeOH, 7- Asorbic Acid, 8-	Acid, 8- ZnAct,	., 9-	
Yes /	No NA:	[] Pickup	Sampled by: Salahi	Delscou							
Cooler Temp: 7 · 6 / C	Ce	[] Technicians	Comments: 8082	Serial 3	3540 EX	EXTRACTION					
Relipquished be (Signapure)	6 all 1172 C	Received by: (Signature)	C/q/n 1725	Relinquished by: (Signature)	(Signature)		Date/Time	Received by	Received by: (Signature)	Date/Time	me
3 X 2	7	W. / W.	<u>ş</u>	7	, ,,,			; -			T

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt 19/26/04 B

Date/Time

Received by: (Signature)

Date/Time

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CHAIN OF CUSTODY

Reporting Limits

Turn Time Standard Other RussH If faster than 5 days, prior approval by laboratory is required # State where samples were collected from: ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211

70/9 (70%) (C1 710) E (601) (C1 6/06)	70/4 17	State where sample	State where samples were collected from:	-)	5	4
Iel. (401) 401-/101 Fax (401) 4	01-4400	MA (KI) CI	NH NJ NY ME	CEE	.		Electron	Electronic Deliverable	rable	Yes	0 N	1
www.esslaboratory.com		Is this project for a MA-MCP	Is this project for any of the following: MA-MCP Navy USACE	Other	ĭ		Format: Excel	Excel_	Access	PDF	Other	
Co. Name	Project #		Project Name (20 Char. or less)				Ü	rcle and/	or Write	Circle and/orWrite Required Analysis	Analysis	
Wooden & Congen	219353	303 SAFETY	N Keen				-		£:	(8		
Contact Person	Address QS	Capp.			\$.I	HdA HdA	Hdž	PAH 608 608	0/78	ર્ગ) STVI. 2		
1 2	ð	Zip 02903	PO#			∂! O.		808 Pesticida		mp ACE-ME NBC	tiliniavila audum	
	733 5087		Email Address		Contai	EX CE	14 EN LLH LLH 18100	8082 FCB	KCKY8			·····
m ab		Sample Identification (20 Char or les)	ion (20 Char or less)	Pres Code	Number	8260 WTBE/BT MTBE/BT	Eb	8081 Pesticides	8270 SVO/	METALS (MCP-RC		
0051 11/Pb) —	X S S	Sis-8		~	7)			X				
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- c a u 1540	NS NB	VB-13		_	2			×				
1543 1543	30 2 X	VB-14			1 4			ス	·			
7551 m/p/9/) \ S X	VB-15)	1 4			文				
Container Type: P-Poly G-Glass S-Sterile V-VOA	V-VOA Matrix: S-Soil	il SD-Solid D-Sludge	WW-Waste Water	GW-Ground Water	i Water	SW-Surface Water	e Water		DW-Drinking Water		O-Oil W-Wipes	F-Filters
Cooler Present Yes No	Internal Use Only		Preservation Code 1- NP, 2- HC1, 3- H.SO4, 4- HNO3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9-	T ₂ SO ₄ , 4	· HNO3,	5- NaOH,	6- McC	H, 7- As	orbic Ac	id, 8- ZnA	ıct, 9-	
Seals Intact Yes No NA:	∠ []Pickup	Sampled by:	SEAT DRISCOL	4								
Cooler Temp: 16 16	[] Technicians_	Comments:	8082 with	3540	EX	EXTRACTION	7		:			

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

Page 15 of 16

Relinquished by: (Signature)

CHAIN OF CUSTODY

Page 3

Turn Time ESS Laboratory
Division of Thielsch Engineering, Inc.

Division of Thielsch Engineering, Inc. It faster than 5 days, prior approval	Turn Time Standard Other 2054 Reporting Limits ESS LAB PROJECT ID If faster than 5 days, prior approval by laboratory is required #
185 Frances Avenue, Cranston, K. 102910-2211 State where samples were collected from:	
ax (401) 401-4400	H N N IN ME Office No.
www.esslaboratory.com ls this project for any of the following: Additional content of the following content of the fol	of the following: USACE Other Format: Excel Access PDF Other
Co. Name Project # Project Name (20 Char. or less)	ame (20 Char or less) Circle and/or Write Required Analysis
Introduct of Changes 219 303 Safety Kleen	
Address	TVII HV6 HV6 EVB EVB EVB EVB EVB EVB EVB EVB EVB EVB
State	ABCS Company of the c
20203	SOI CECO
Telephone # Fax # Fax # A01 273 5087 Email Address	1 of (Cond)
Date Collection CoMP GRAB MAITRIX	Pres Code Uumbe Sys Vox 826 Vox 826 Vox 8126 Rox 8126 Ro
04 694 1647 KS DUP-SW-19	
45 × 1 × 1 × 1	1 1 6
1647	
1,550 A)
[653 X S	1 1 6 X
S X Sol	× × ×
	I I G X ROSH
15/71 204	I I G X RUSH
Container Type: P-Poly, G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Waste	WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters
Cooler Present Yes No Internal Use Only Preservation Code I- NP, 2-	ode I- NP, 2- HC1, 3- HsO6, 4- HNO3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9-
Seals Intact Yes No NA: Z [] Pickup Sampled by: Septen	SEAN Dascoll
Cooler Temp: 1 to Ce [] Technicians Comments Res	PKB 2082 WITH 3540 EXTRACTION

*By circling MA-MCB, client acknowledges samples were collected in accordance with MADEP CAM VII A

Picase fax all changes to Chain of Custody in writing.

10/26/04 B 1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

EKTRACTION

3546 Date/Time

Relinquished by: (Signature)

 $\mathcal{C}/q_{ln}|135$ Date/Time

Received by: (Signature)

Date/Time

Relinquested by (Signature)

Received by: (Signature)

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Relinquished by: (Signature)



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1106125

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard Laboratory Director

Digitally signed by Laurel Stoddard Date: 2011.06.16 11:28:29 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106125

SAMPLE RECEIPT

The following samples were received on June 09, 2011 for the analyses specified on the enclosed Chain of Custody Record.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	Analysis
1106125-01	VB-16	Soil	8082
1106125-02	VB-17	Soil	8082
1106125-03	SW-15	Soil	8082
1106125-04	SW-17	Soil	8082
1106125-05	Dup-Sw-15	Soil	8082
1106125-06	SW-16	Soil	8082
1106125-07	SW-8	Soil	8082
1106125-08	Dup-Sw-8	Soil	8082
1106125-09	SW-13	Soil	8082
1106125-10	SW-14	Soil	8082
1106125-11	VB-13	Soil	8082
1106125-12	VB-14	Soil	8082
1106125-13	VB-15	Soil	8082
1106125-14	SW-20	Soil	8082
1106125-15	SW-21	Soil	8082
1106125-16	SW-22	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106125

PROJECT NARRATIVE

8082 Polychlorina	ted Biphenyls (PCB)
1106125-01	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1106125-02	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1106125-07	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1106125-08	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1106125-10	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
CF11017-MS2	Matrix Spike is diluted below the MRL (MD).
	Aroclor 1016 (% @ 40-140%), Aroclor 1260 (% @ 40-140%)
CF11017-MS2	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
CF11017-MSD2	Matrix Spike is diluted below the MRL (MD).
	Aroclor 1016 (% @ 40-140%), Aroclor 1260 (% @ 40-140%)
CF11017-MSD2	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

<u>Definitions of Quality Control Parameters</u>

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-16 Date Sampled: 06/09/11 15:46

Percent Solids: 91 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DI	EC		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	$\overline{\mathbf{DF}}$	Analyzed Sequence	Batch
Arocior 1016	ND (43.1)	10	200	06/14/11 11:22	CF11017
Aroclor 1221	ND (43.1)	10	200	06/14/11 11:22	CF11017
Aroclor 1232	ND (43.1)	10	200	06/14/11 11:22	CF11017
Aroclor 1242	ND (43.1)	10	200	06/14/11 11:22	CF11017
Areclor 1248	689 (43.1)	10	200	06/14/11 11:22	CF11017
Aroclor 1254	ND (43.1)	10	200	06/14/11 11:22	CF11017
Aroclor 1260	ND (43.1)	10	200	06/14/11 11:22	CF11017
Aroclor 1262	ND (43.1)	10	200	06/14/11 11:22	CF11017
Aroclor 1268	ND (43.1)	10	200	06/14/11 11:22	CF11017

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	<i>30-150</i>
Surrogate: Decachlorobíphenyi [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-17 Date Sampled: 06/09/11 15:49

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

8082 Polychlorinated Biphenyls (PCB)

- RES	

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Seque	nce <u>Batch</u>
Aroclor 1016	ND (10.6)	10	50	06/14/11 8:51	CF11017
Aroclor 1221	ND (10.6)	10	50	06/14/11 8:51	CF11017
Aroclor 1232	ND (10.6)	10	50	06/14/11 8:51	CF11017
Aroclor 1242	ND (10.6)	10	50	06/14/11 8:51	CF11017
Aroclor 1248	177 (10.6)	10	50	06/14/11 8:51	CF11017
Aroclor 1254	ND (10.6)	10	50	06/14/11 8:51	CF11017
Aroclor 1260	ND (10.6)	10	50	06/14/11 8:51	CF11017
Arocler 1262	ND (10.6)	10	50	06/14/11 8:51	CF11017
Aroclor 1268	ND (10.6)	10	50	06/14/11 8:51	CF11017

Qualifier

	70,1020,019	Quantita.	£11771CD
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	5D	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Client Sample ID: SW-15
Date Sampled: 06/09/11 16:05

Date Sampled: 06/09/11 16:0 Percent Solids: 93 Initial Volume: 5.1

Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-03

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

		RI - RES DI	EC		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.211)	10	1	06/13/11 16:31	CF11017
Aroclor 1221	ND (0.211)	10	1	06/13/11 16:31	CF11017
Aroclor 1232	ND (0.211)	10	1	06/13/11 16:31	CF11017
Aroclor 1242	ND (0.211)	10	1	06/13/11 16:31	CF11017
Aroclor 1248	1.63 (0.211)	10	1	06/13/11 16:31	CF11017
Aroclor 1254	ND (0.211)	10	1	06/13/11 16:31	CF11017
Aroclor 1260	ND (0.211)	10	1	06/13/11 16:31	CF11017
Aroclor 1262	ND (0.211)	10	1	06/13/11 16:31	CF11017
Aroclor 1268	ND (0.211)	10	1	06/13/11 16:31	CF11017
	%Recovery Qualifier	Limits			

Surrogate: Decachlorobiphenyl	102 %	30-150
Surrogate: Decachlorobiphenyl [2C]	100 %	30-150
Surrogate: Tetrachloro-m-xylene	82 %	30-150
Surrogate: Tetrachioro-m-xylene [2C]	98 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-17 Date Sampled: 06/09/11 16:08

Percent Solids: Initial Volume: 5.4 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI	_	RES	DEC

Limits

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.201)	10	1	06/13/11 20:17	CF11017
Aroclor 1221	ND (0.201)	10	1	06/13/11 20:17	CF11017
Aroclor 1232	ND (0.201)	10	1	06/13/11 20:17	CF11017
Aroclor 1242	ND (0.201)	10	1	06/13/11 20:17	CF11017
Aroclor 1248	1.54 (0.201)	10	1	06/13/11 20:17	CF11017
Areclor 1254	2.83 (0.201)	10	1	06/13/11 20:17	CF11017
Aroclor 1260	ND (0.201)	10	1	06/13/11 20:17	CF11017
Aroclor 1262	ND (0.201)	10	1	06/13/11 20:17	CF11017
Aroclor 1268	ND (0.201)	10	1	06/13/11 20:17	CF11017

Qualifier

· ·	,	· ·	
Surrogate: Decachlorobiphenyl	105 %		30-150
Surrogate: Decachlorobiphenyl [2C]	109 %		30-150
Surrogate: Tetrachloro-m-xylene	104 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	99 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: Dup-Sw-15 Date Sampled: 06/09/11 16:05

Percent Solids: 93 Initial Volume: 5 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-05

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

RI	_	RES	DEC
1/1	-		$\nu \sim$

Analyte Aroclor 1016	Results (MRL) ND (0.215)	Limit	<u>DF</u>	Analyzed Sequence 06/13/11 20:55	Batch CF11017
Aroelor 1221	ND (0.215)	10	1	06/13/11 20:55	CF11017 CF11017
Aroclor 1232	ND (0.215)	10	1	06/13/11 20:55	CF11017
Aroclor 1242	ND (0.215)	10	1	06/13/11 20:55	CF11017
Aroclor 1248	2.00 (0.215)	10	1	06/13/11 20:55	CF11017
Aroclor 1254	ND (0.215)	10	1	06/13/11 20:55	CF11017
Aroclor 1260	ND (0.215)	10	1	06/13/11 20:55	CF11017
Arocior 1262	ND (0.215)	10	1	06/13/11 20:55	CF11017
Aroclor 1268	ND (0.215)	10	1	06/13/11 20:55	CF11017
	%Recovery Qualifier	Limits			

Surrogate: Decachlorobiphenyl	76 %	30-150
Surrogate: Decachlorobiphenyl [2C]	<i>65</i> %	30-150
Surrogate: Tetrachloro-m-xylene	59 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	<i>56</i> %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-16 Date Sampled: 06/09/11 16:44

Percent Solids: 94
Initial Volume: 5.4

Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-06

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

8082 Polychlorinated Biphenyls (PCB)

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RI	-	RES	I S PI E

Limits

Analyte Aroclor 1016	Results (MRL)	<u>Limit</u> 10	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> <u>Sequence</u> 06/13/11 14:38	Batch
	ND (0.197)		1		CF11017
Aroclor 1221	ND (0.197)	10	1	06/13/11 14:38	CF11017
Aroclor 1232	ND (0.197)	10	1	06/13/11 14:38	CF11017
Aroclor 1242	ND (0.197)	10	1	06/13/11 14:38	CF11017
Aroclor 1248	ND (0.197)	10	1	06/13/11 14:38	CF11017
Aroclor 1254	0.514 (0.197)	10	1	06/13/11 14:38	CF11017
Aroclor 1260	ND (0.197)	10	1	06/13/11 14:38	CF11017
Aroclor 1262	ND (0.197)	10	1	06/13/11 14:38	CF11017
Aroclor 1268	ND (0.197)	10	1	06/13/11 14:38	CF11017

Oualifier

	,	•	
Surrogate: Decachlorobiphenyl	65 %		30-150
Surrogate: Decachlorobiphenyl [2C]	<i>54 %</i>		30-150
Surrogate: Tetrachloro-m-xylene	63 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	<i>66</i> %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

Client Sample ID: SW-8

Date Sampled: 06/09/11 15:00

Percent Solids:

94

Initial Volume: 5.2

Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-07

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

RI-	RES	DEC
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		M - MDS DI			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (102)	10	500	06/14/11 11:41	CF11017
Aroclor 1221	ND (102)	10	500	06/14/11 11:41	CF11017
Aroclor 1232	ND (102)	10	500	06/14/11 11:41	CF11017
Aroclor 1242	ND (102)	10	500	06/14/11 11:41	CF11017
Aroclor 1248	1920 (102)	10	500	06/14/11 11:41	CF11017
Aroclor 1254	ND (102)	10	500	06/14/11 11:41	CF11017
Aroclor 1260	ND (102)	10	500	06/14/11 11:41	CF11017
Aroclor 1262	ND (102)	10	500	06/14/11 11:41	CF11017
Aroclor 1268	ND (102)	10	500	06/14/11 11:41	CF11017

	TUNECUVERY	Qualities	Luints
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate; Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	96	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: Dup-Sw-8 Date Sampled: 06/09/11 15:00

Percent Solids: 92 Initial Volume: 5.4 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-08

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

8082 Polychlorinated Biphenyls (PCB)

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Limits

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Areclor 1016	ND (201)	10	1000	06/14/11 12:37	CF11017
Aroclor 1221	ND (201)	10	1000	06/14/11 12:37	CF11017
Aroclor 1232	ND (201)	10	1000	06/14/11 12:37	CF11017
Aroclor 1242	ND (201)	10	1000	06/14/11 12:37	CF11017
Aroclor 1248	2520 (201)	10	1000	06/14/11 12:37	CF11017
Aroclor 1254	ND (201)	10	1000	06/14/11 12:37	CF11017
Aroclor 1260	ND (201)	10	1000	06/14/11 12:37	CF11017
Aroclor 1262	ND (201)	10	1000	06/14/11 12:37	CF11017
Aroclor 1268	ND (201)	10	1000	06/14/11 12:37	CF11017

Qualifier

	•	•	
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-13 Date Sampled: 06/09/11 15:30

Percent Solids: Initial Volume: 5.4 Final Volume: 10 Extraction Method: 3540

Surrogate: Tetrachloro-m-xylene [2C]

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-09

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

8082 Polychlorinated Biphenyls (PCB)

				RI - RES D	EC			
<u>Analyte</u>	Results (MRL)			Limit	<u>DF</u>	Analyzed	Sequence	<u>Batch</u>
Aroclor 1016	ND (0.197)			10	1	06/14/11 0:03		CF11017
Aroclor 1221	ND (0.197)			10	1	06/14/11 0:03		CF11017
Aroclor 1232	ND (0.197)			10	1	06/14/11 0:03		CF11017
Aroclor 1242	ND (0.197)			10	1	06/14/11 0:03		CF11017
Aroclor 1248	6.21 (0.985)			10	5	06/14/11 10:25		CF11017
Aroclor 1254	9.51 (0.985)			10	5	06/14/11 10:25		CF11017
Aroclor 1260	ND (0.197)			10	1	06/14/11 0:03		CF11017
Aroclor 1262	ND (0.197)			10	1	06/14/11 0:03		CF11017
Aroclor 1268	ND (0.197)			10	1	06/14/11 0:03		CF11017
	%Rec	covery	Qualifier	Limits				
Surrogate: Decachlorobiphenyl	و	00 %		30-150				
Surrogate: Decachlorobiphenyl [2C]	δ	3 %		30-150				
Surrogate: Tetrachloro-m-xylene	8	22 %		30-150	•			

30-150

86 %



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-14 Date Sampled: 06/09/11 15:25

Percent Solids: 91 Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-10

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

	RI - RES DE	CC		
Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sec	uence Batch
ND (10.8)	10	50	06/14/11 10:44	CF11017
ND (10.8)	10	50	06/14/11 10:44	CF11017
ND (10.8)	10	50	06/14/11 10:44	CF11017
ND (10.8)	10	50	06/14/11 10:44	CF11017
183 (10.8)	10	50	06/14/11 10:44	CF11017
ND (10.8)	10	50	06/14/11 10:44	CF11017
ND (10.8)	10	50	06/14/11 10:44	CF11017
ND (10.8)	10	50	06/14/11 10:44	CF11017
ND (10.8)	10	50	06/14/11 10:44	CF11017
	ND (10.8) ND (10.8) ND (10.8) ND (10.8) ND (10.8) 183 (10.8) ND (10.8) ND (10.8) ND (10.8)	Results (MRL) Limit ND (10.8) 10 ND (10.8) 10 ND (10.8) 10 ND (10.8) 10 183 (10.8) 10 ND (10.8) 10	ND (10.8) 10 50 ND (10.8) 10 50	Results (MRL) Limit DF Analyzed Sector ND (10.8) 10 50 06/14/11 10:44

	YORELOVELY	Qualitiei	LHIHIS
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	95	SD	20.150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-13 Date Sampled: 06/09/11 15:40

Percent Solids: Initial Volume: 5.3 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-11

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

\mathbf{p}	DEC	DEC

_	Analyte Troclor 1016	Results (MRL) ND (0.207)	<u>Limit</u> 10	<u>DF</u>	Analyzed Sequence 06/14/11 3:12	Batch CF11017
	croclor 1221	ND (0.207)	10	1	06/14/11 3:12	CF11017
A	croclor 1232	ND (0.207)	10	1	06/14/11 3:12	CF11017
Α	croclor 1242	ND (0.207)	10	1	06/14/11 3:12	CF11017
A	roclor 1248	2.48 (0.207)	10	1	06/14/11 3:12	CF11017
Α	roclor 1254	ND (0.207)	10	1	06/14/11 3:12	CF11017
Α	roclor I260	ND (0.207)	10	1	06/14/11 3:12	CF11017
Α	croclor 1262	ND (0.207)	10	1	06/14/11 3:12	CF11017
Α	croclor 1268	ND (0.207)	10	1	06/14/11 3:12	CF11017

•	%Recovery	Qualifier	Limits
Surrogate: Decachlorobíphenyl	93 %		30-150
Surrogate: Decachlorobiphenyl [2C]	87 %		30-150
Surrogate: Tetrachloro-m-xylene	82 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	81 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-14 Date Sampled: 06/09/11 15:43

Percent Solids: 90 Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-12

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

	RI	_	RES	DEC
--	----	---	-----	-----

		KI ·	- KES D	EC		
Analyte	Results (MRL)		Limit 10	<u>DF</u>	Analyzed Sequence 06/14/11 3:50	Batch CF11017
Aroclor 1016	ND (0.218)			_		
Aroclor 1221	ND (0.218)		10	1	06/14/11 3:50	CF11017
Aroclor 1232	ND (0.218)		10	1	06/14/11 3:50	CF11017
Aroclor 1242	ND (0.218)		10	1	06/14/11 3:50	CF11017
Aroclor 1248	2.55 (0.218)		10	1	06/14/11 3:50	CF11017
Aroclor 1254	3.86 (0.218)		10	1	06/14/11 3:50	CF11017
Aroclor 1260	ND (0.218)		10	1	06/14/11 3:50	CF11017
Aroclor 1262	ND (0.218)		10	1	06/14/11 3:50	CF11017
Aroclor 1268	ND (0.218)		10	1	06/14/11 3:50	CF11017
	%Recovery	Qualifier	Limits			
Secretary Secretary Secretary						

	-	
Surrogate: Decachlorobiphenyl	83 %	30-150
Surrogate: Decachlorobiphenyl [2C]	111 %	30-150
Surrogate: Tetrachloro-m-xylene	61 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	87 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-15 Date Sampled: 06/09/11 15:52

Percent Solids: 96 Initial Volume: 5.5 Final Volume: 10 Extraction Method: 3540

Surrogate: Tetrachloro-m-xylene [2C]

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-13

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES DE	7

30-150

<u>Analyte</u>	Results (MRL)			Limit	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.189)			10	1	06/14/11 4:27	CF11017
Aroclor 1221	ND (0.189)			10	1	06/14/11 4:27	CF11017
Aroclor 1232	ND (0.189)			10	1	06/14/11 4:27	CF11017
Aroclor 1242	ND (0.189)			10	1	06/14/11 4:27	CF11017
Aroclor 1248	8.13 (0.947)			10	5	06/14/11 12:56	CF11017
Aroclor 1254	ND (0.189)			10	1	06/14/11 4:27	CF11017
Aroclor 1260	ND (0.189)			10	1	06/14/11 4:27	CF11017
Aroclor 1262	ND (0.189)			10	1	06/14/11 4:27	CF11017
Aroclor 1268	ND (0.189)			10	1	06/14/11 4:27	CF11017
		%Recovery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl		116 %		30-150			
Surrogate: Decachlorobiphenyl [2C]		113 %		30-150		·	
Surrogate: Tetrachloro-m-xylene		106 %		<i>30-150</i>			

109 %



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-20 Date Sampled: 06/09/11 16:50

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-14

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

RI	_	R	FS	DE	C

		-			•	
<u>Analyte</u>	Results (MRL)		<u>Limit</u>	$\overline{\mathbf{DF}}$	Analyzed Sequence	Batch
Aroclor 1016	ND (0.227)		10	1	06/14/11 5:05	CF11017
Aroclor 1221	ND (0.227)		10	1	06/14/11 5:05	CF11017
Aroclor 1232	ND (0.227)		10	1	06/14/11 5:05	CF11017
Aroclor 1242	ND (0.227)		10	1	06/14/11 5:05	CF11017
Aroclor 1248	2.44 (0.227)		10	1	06/14/11 5:05	CF11017
Aroclor 1254	ND (0.227)		10	I	06/14/11 5:05	CF11017
Aroclor 1260	ND (0.227)		10	1	06/14/11 5:05	CF11017
Aroclor 1262	ND (0.227)		10	1	06/14/11 5:05	CF11017
Aroclor 1268	ND (0.227)		10	1	06/14/11 5:05	CF11017
	%Recovery	V Qualifier	Limits			

Surrogate: Decachlorobiphenyl	118 %	30-150
Surrogate: Decachlorobiphenyl [2C]	119 %	30-150
Surrogate: Tetrachioro-m-xylene	109 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	136 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-21 Date Sampled: 06/09/11 16:53

Percent Solids: 92 Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-15

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

Analyte Aroclor 1016	Results (MRL) ND (0.209)	<u>Limit</u> 10	<u>DF</u>	Analyzed Sequence 06/14/11 5:43	Batch CF11017
Aroclor 1221	ND (0.209)	10	1	06/14/11 5:43	CF11017
Aroclor 1232	ND (0.209)	10	1	06/14/11 5:43	CF11017
Aroclor 1242	ND (0.209)	10	1	06/14/11 5:43	CF11017
Aroclor 1248	ND (0.209)	10	1	06/14/11 5:43	CF11017
Aroclor 1254	1.24 (0.209)	10	1	06/14/11 5:43	CF11017
Aroclor 1260	ND (0.209)	10	1	06/14/11 5:43	CF11017
Aroclor 1262	ND (0.209)	10	1	06/14/11 5:43	CF11017
Aroclor 1268	ND (0.209)	10	1	06/14/11 5:43	CF11017
				· ·	

Qualifier

Limits

•		
Surrogate: Decachlorobiphenyl	87 %	30-150
Surrogate: Decachlorobiphenyl [2C]	91 %	30-150
Surrogate: Tetrachioro-m-xylene	97 %	30-150
Surrogate: Tetrachioro-m-xylene [2C]	<i>85</i> %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-22 Date Sampled: 06/09/11 16:56

Percent Solids: 83 Initial Volume: 5.3 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106125 ESS Laboratory Sample ID: 1106125-16

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/10/11 18:00

8082 Polychlorinated Biphenyls (PCB)

TYT	- RFS	DEC
ĸ	- Kr.	

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.227)	<u>Limit</u> 10	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> <u>Sequence</u> 06/14/11 6:20	Batch CF11017
Aroclor 1221	ND (0.227)	10	1	06/14/11 6:20	CF11017
Aroclor 1232	ND (0.227)	10	1	06/14/11 6:20	CF11017
Aroclor 1242	ND (0.227)	10	1	06/14/11 6:20	CF11017
Aroclor 1248	3.49 (0.227)	10	1	06/14/11 6:20	CF11017
Aroclor 1254	ND (0.227)	10	1	06/14/11 6:20	CF11017
Aroelor 1260	ND (0.227)	10	1	06/14/11 6:20	CF11017
Aroclor 1262	ND (0.227)	10	1	06/14/11 6:20	CF11017
Aroclor 1268	ND (0.227)	10	1	06/14/11 6:20	CF11017

Oualifier

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Surrogate: Decachlorobiphenyl	103 %		30-150
Surrogate: Decachlorobiphenyl [2C]	<i>88</i> %		30-150
Surrogate: Tetrachloro-m-xylene	<i>99</i> %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	98 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106125

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
		-								

8082 Polychlorinated	d Biphenyls (PCB)
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Batch CF11017 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Arocior 1242	ND	0.0500	mg/kg wet							
Arocior 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Arocior 1260	ND	0.0500	mg/kg wet							
Aroclar 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0274		mg/kg wet	0.02500		110	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0259		mg/kg wet	0.02500		104	30-150			
Surrogate: Tetrachloro-m-xylene	0.0247		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0258		mg/kg wet	0.02500		103	30-150			
LCS		***************************************			***************************************					
Aroclor 1016	0.504	0.0500	mg/kg wet	0.5000		101	40-140			
Arocior 1260	0.520	0.0500	mg/kg wet	0.5000		104	40-140			
				****		· · · · · · · · · · · · · · · · · · ·				
Surrogate: Decachlorobiphenyl	0.0303		mg/kg wet	0.02500		121	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0284		mg/kg wet	0.02500		114	30-150			
Surrogate: Tetrachloro-m-xylene	0.0286		mg/kg wet	0.02500		114	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0284		mg/kg wet	0.02500		114	30-150			
LCS Dup										
Aroclor 1016	0.500	0,0500	mg/kg wet	0.5000		100	40-140	0,6	50	
Araclor 1260	0.526	0.0500	mg/kg wet	0.5000		105	40-140	1	50	
Surrogate: Decachlorobiphenyl	0.0300		mg/kg wet	0.02500		120	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0282		mg/kg wet	0.02500		113	30-150			
Surrogate: Tetrachloro-m-xylene	0.0276		mg/kg wet	0.02500		110	30-150			
Surrogate: Tetrachioro-m-xylene [2C]	0.0271		mg/kg wet	0.02500		108	30-150			
Matrix Spike Source: 1106125-03					***************************************					
Aroclor 1016	1.81	0.207	mg/kg dry	2.068	ND	87	40-140			
Arodor 1260	2.15	0.207	mg/kg dry	2.068	ND	104	40-140			
Surrogate: Decachlorobiphenyl	0.122		mg/kg dry	0.1034		118	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.114		mg/kg dry	0.1034		110	<i>30-150</i>			
Surrogate: Tetrachloro-m-xylene	0.0871		mg/kg dry	0.1034		84	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.102		mg/kg đry	0.1034		98	30-150			
Matrix Spike Source: 1106125-07										
Aroclor 1016	ND	104	mg/kg dry	2.086	ND	•	40-140			MD
Arodor 1260	ND	104	mg/kg dry	2.086	ND		40-140			MD
Surrogate: Decachiorobiphenyl	ND		mg/kg dry	0.1043			<i>30-150</i>			SD
Surrogate: Decachlorobiphenyl [2C]	ND		mg/kg dry	0.1043			30-150			SD
Surrogate: Tetrachloro-m-xylene	ND		mg/kg dry	0.1043			30-150			SD



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106125

Quality Control Data

											4
				Spłke	Source		%REC		RPD		l
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier	l

Batch CF11017 - 3540										
Surrogate: Tetrachloro-m-xylene [2C]	ND		mg/kg dry	0.1043			30-150			SD
Matrix Spike Dup Source: 1106125-03										
Aroclor 1016	1.97	0.211	mg/kg dry	2.108	ND	94	40-140	9	50	
Aroclor 1260	1.84	0.211	mg/kg dry	2.108	ND	87	40-140	15	50	
Surrogate: Decachlorobiphenyl	0.107		mg/kg dry	0.1054		102	30-150			
Surrogate: Decachiorobiphenyl [2C]	0.106		mg/kg dry	0.1054		100	30-150			
Surrogate: Tetrachloro-m-xylene	0.0925		mg/kg dry	0.1054		88	30-150			
Surrogate: Tetrachioro-m-xylene [2C]	0.0956		mg/kg dry	0.1054		91	30-150			
Matrix Spike Dup Source: 1106125-07										
Arocior 1016	ND	104	mg/kg dry	2.086	ND		40-140		50	MD
Aroclor 1260	ND	104	mg/kg dry	2,086	ND		40-140		50	MD
Surrogate: Decachlorobiphenyl	ND		mg/kg dry	0.1043			30-150			SĐ
Surrogate: Decachlorobiphenyl [2C]	ND		mg/kg dry	0.1043			30-150			SD
Surrogate: Tetrachioro-m-xylene	ND		mg/kg dry	0.1043			30-150			SD
Surrogate: Tetrachloro-m-xylene [2C]	ND		mg/kg dry	0.1043			30-150			SD



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106125

Notes and Definitions

U Analyte included in the analysis, but not detected	
SD Surrogate recovery(ies) diluted below the MRL (SD).	
MD Matrix Spike is diluted below the MRL (MD).	
D Diluted.	
ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagg	ed Analytes
dry Sample results reported on a dry weight basis	•
RPD Relative Percent Difference	
MDL Method Detection Limit	
MRL Method Reporting Limit	
LOD Limit of Detection	
LOQ Limit of Quantitation	
DL Detection Limit	
I/V Initial Volume	
F/V Final Volume	
§ Subcontracted analysis; see attached report	
Range result excludes concentrations of surrogates and/or internal standards eluting in that range.	
Range result excludes concentrations of target analytes eluting in that range.	
Range result excludes the concentration of the C9-C10 aromatic range.	
Avg Results reported as a mathematical average.	
NR No Recovery	

[CALC] Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106125

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141 Lead Paint, Lead in Children's Metals Jewelry http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Woodard & Curran

Client Project ID: _

Shipped/Delivered Via: ESS Courier

Date Project Due: 6/\(\frac{4}{6}/11\)
S Courier Days For Project: 5 Day

ESS Project ID: <u>11060125</u>

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved:	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: 4.6	,	16. Are ESS labels on correct containers?	Yes No
Iced With: Ice		17. Were samples received intact?	YesINo
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	
18. Was there need to call project manage DOTS NOT BUB-20 VB	on c	ss status? If yes, please explain. フain フルー10 5 ルール	<u>VB</u> -18
Who was called?:		By whom?	

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative	
1	Yes	4 oz Soil Jar	1	NP	
2	Yes	4 oz Soil Jar	1	NP	
3	Yes	4 oz Soil Jar	3	NP	
4	Yes	4 oz Soil Jar	1	NP	
5	Yes	4 oz Soil Jar	1	NP	
6	Yes	4 oz Soil Jar	1	NP	
7	Yes	4 oz Soil Jar	3	NP	
. 8	Yes	4 oz Soil Jar	1	NP	
9	Yes	4 oz Soil Jar	1	NP	
10	Yes	4 oz Soil Jar	1	NP	
11	Yes	4 oz Soil Jar	1	NP	
12	Yes	4 oz Soil Jar	1	NP	
13	Yes	4 oz Soil Jar	1	NP	
14	Yes	4 oz Soil Jar	1	NP	
15	Yes	4 oz Soil Jar	1	NP	
16	Yes	4 oz Soil Jar	101 1	NP	
Completed By:	<u>Id</u> [Date/Time:6/	9/1/		
Reviewed By:		Date/Time:	<u> 1914 </u>		

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Kes | |

Electronic Deliverable

Other

Reporting Limits

Turn Time Other Standard Other 2.5.5.1 If faster than 5 days, prior approval by laboratory is required Is this project for any of the following: State where samples were collected from:

MA (R) CT NH NJ NY ME ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486 www.esslaboratory.com

www.esslaboratory.com			Is this MA-M	Is this project for any of the following: MA-MCP Navy USACE	ICE Other	j Gt	ļ	 	Format: Excel Access	zelAc		PDF	Other	
Co. Name			Project#	Project Name (20 Chan or less)					Circle	Circle and/orWrite Required Analysis	ite Requ	ired An	dysis	
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Contact Person	-			苏		rs.	L.P.C.	<i>स्थातिका (त</i>	809 19940 Hdii	HA¶ 0728		A I) STVI.		
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Telephone#	Fax #	46\ 7.13	Š	Email Address			9 (EX GI 8100 TPH	(808) 1HP MI H E	9 (KA8 KCRA	(EI		
ſ	Collection Time	GEVE		Sample Identification (20 Char. or less)	Pres Code	Munnber Type of	<i>¥0∧</i> 978	1808 Talestri	8081 moo Eb	SVO.	YCLP-RC	WELVES (WCb-		
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OS colodu	icos	×	21-WS-900 S	21-12	•	16			<u> </u>					 ;
OB ciolu	1605	∀ 1	S MS-822-15	-15		2			×					
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11/10/0	1647	メ	\$ Sw2-19)	9			×			0 15	上がつ	
Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid	ass S-Sterile V.	VOA Mai	trix: S-Soil SD-So	lid D-Sludge WW-Waste Water	GW-Ground Water	id Wate		SW-Surface Water		DW-Drinking Water	ng Wate		O-Oil W-Wipes	s F-Filters
Cooler Present XYes	N°	Internal	Internal Use Only	Preservation Code 1- NP, 2- HC1, 3- H,SO4, 4- HNO3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9-	3- H ₂ SO4, 4	- HINC)s, 5- Na	ЭН, 6-	MeOH, 7	- Asorbic	Acid, 8	- ZnAct,	9-	The feeting of the second of t

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signarure)

19 | Date/Time | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | 1905 | Date/Time

Room

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6 ali 11725 Date/Time

Dare/Time

uished by: (Signature)

Received by: (Signature)

Received by. (Signature)

[] Technicians ___

WITH 3540 EXTRACTION

22

SEIN DEISTOLL

Sampled by: Comments:

[] Pickup

No NA:

Seals Intact

Cooler Temp: 4.6 1 C

ESS Laboratory

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 www.esslaboratory.com

CHAIN OF CUSTODY

Other PDF_ Yes Access Electronic Deliverable Format: Excel___ Reporting Limits Iurn Iime Standard Orher KorsH If faster than 5 days, prior approval by laboratory is required # Other Other Is this project for any of the following: MA-MCP Navy USACE State where samples were collected from:
MA (RI) CT NH NJ NY ME

RUSY Circle and/or Write Required Analysis SHIM WELVTS (13) WCF-WCF-METALS (13) ABC7 LCTV-RCRA8 **BCRAS** PPI3 RCRA8 HA¶ 8270 8270 8270 579 FCB 608 8082 FCB Perticides 808 Pesticites × X X 1808 ₹ Diesd EPH स्मारम् श्री sHAMI. EbH $Hd\mathcal{I}$ 9100 HAL 8015 DRO WIBE/BIEX 8051 GRO HďΛ \$108 VOA 254'5 0978 ₽79 Type of Containers S S এ 5 ۵ 0 ۍ, J J -0 Number of Containers: Code Pres Project Name (20 Char. or less) Sample Identification (20 Char or less) SAFETY NEED **Email Address** PO# 0,000 - SUC MS:3-8-8 ń MS-Suo- R S Carr Sic. B S VB-15 5 VB-14 21 -cris 9505 S) · OX 41-53 VB-13 219323 Project # **专、218,855 (**) S MATRIX GRAB COVED Fax# S Safe Collection 1530 1543 520 Time (557 8 5.45 3 88 (500 1525 Woodend & Comment 27 Date 0 9 11 111519 11/5/2 15/3 401 273 VOST = 5 9 Cign Mandence 0 9 5 = | | | | <u>=</u> <u>0</u> <u>₹</u> Contact Person 1/24/2/ Co. Name Sample # ESS LAB

*By circling MA-MCB, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Preservation Code 1-NP, 2-HC1, 3-HSO,, 4-HNO,, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-

1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

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Date/Time

eiged by: (Signature)

Date/Time

Relinguished by (Signature)

Cooler Temp:

Seals Intact

[] Technicians_

Date/Time

Received by: (Signature)

Date/Time

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Sampled by: Comments:

[] Pickup

No NA:

Internal Use Only

No.

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Cooler Present

Container Type: P-Poly

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Relinquished by: (Signature)

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Turn Time Standard Other R. S. Standard Other R. S. S. S. If faster than 5 days, prior approval by laboratory is required

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Electronic Deliverable

Other

State where samples were collected from:

MA (RD CT NH NJ NY ME)

Reporting Limits

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 ESS Laboratory

www.esslaboratory.com		Is this MA-N	Is this project for any of the following: MA-MCP USACE	E Other		For	Format: Excel	Access	PDF_	Other	1.
Co. Name		Project #	Project Name (20 Chat. or less)		-		Circle and	d/orWrite	Circle and/orWrite Required Analysis	is	
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Contact Person		Address			24.2	nəkus; HdA	194 1998 1908 1908	0/28 HV	i) stri 8		
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Telephone #	Fax #	L042 - 61-6	Email Address	۰, ر	conta	8 5 X 001 HTI	im eH	,			LP
ESS LAB Date	Collection Fr.	MAR XIXIXI	Sample Identification (20 Chan or less)	Pres Code Vumber) ło odéj 0978	NOA MTBE/BTI MTBE/BTI	EPP. 140 PA 808 I Pesticidës	SVOA SVOA S270	VELYTS (I NCG- LCTF-YCI		
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Container Type: P-Poly, G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid	Blass S-Sterile V-VOA	Matrix: S-Soil SD-So	D-Sludge WW-Waste Water	GW-Ground Water		SW-Surface Water		DW-Drinking Water	Water O-Oil W-Wipes	7-Wipes F-Filters	<u>8</u>
Cooler Present	No No	Internal Use Only	Preservation Code 1-NP, 2-HC1, 3-H,SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-	H ₂ SO ₄ , 4-	HNO, 5-	NaOH, 6-	MeOH, 7-1	Asorbic Ac	id, 8- ZnAct, 9-		1

*By circling MA-MCR, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

EXTRACTION

3540 Date/Time

E13

5003

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SEAN Dascul

Sampled by: Comments:

[] Pickup

No NA:

2

Cooler Temp: _ Seals Intact

Relinquished by: (Signature)

19/1/125 Date/Time

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Received by: (Signature)

Received by: (Signature)

bla | 1725 Date/Time

Relinquished by (Signature)

[] Technicians_

Date/Time

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Refinquished by: (Signature)

	2	-	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1106132

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director



Digitally signed by Laurel Stoddard Date: 2011.06.17 16:27:23 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106132

SAMPLE RECEIPT

The following samples were received on June 10, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1106132-01	SW-10	Soil	8082
1106132-02	SW-11	Soil	8082
1106132-03	VB-18	Soil	8082
1106132-04	VB-19	Soil	8082
1106132-05	VB-20	Soil	8082
1106132-06	VB-21	Soil	8082
1106132-07	VB-22	Soil	8082
1106132-08	VB-23	Soil	8082
1106132-09	VB-24	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106132

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

EPH and VPH Alkane Lists

Volatile Organics Surrogate Information



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-10 Date Sampled: 06/09/11 15:05

Percent Solids: 92 Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106132 ESS Laboratory Sample ID: 1106132-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/15/11 15:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DI	E C		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.213)	10	1	06/16/11 13:59	CF11515
Aroclor 1221	ND (0.213)	10	1	06/16/11 13:59	CF11515
Aroclor 1232	ND (0.213)	10	1	06/16/11 13:59	CF11515
Aroclor 1242	ND (0.213)	10	1	06/16/11 13:59	CF11515
Aroclor 1248	16.3 (1.07)	10	5	06/17/11 9:29	CF11515
Aroclor 1254	15.8 (1.07)	10	5	06/17/11 9:29	CF11515
Aroclor 1260	ND (0.213)	10	1	06/16/11 13:59	CF11515
Aroclor 1262	ND (0.213)	10	1	06/16/11 13:59	CF11515
Aroclor 1268	ND (0.213)	10	1	06/16/11 13:59	CF11515

Qualifier

Limits

	,	
Surrogate: Decachlorobiphenyl	94 %	30-150
Surrogate: Decachlorobiphenyl [2C]	96 %	30-150
Surrogate: Tetrachloro-m-xylene	100 %	30-150
Surrogate: Tetrachioro-m-xylene [2C]	90 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-11 Date Sampled: 06/09/11 15:10

Percent Solids: Initial Volume: 5.8 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106132 ESS Laboratory Sample ID: 1106132-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/15/11 15:30

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.194)	10	1	06/16/11 14:36	CF11515
Aroclor 1221	ND (0.194)	10	1	06/16/11 14:36	CF11515
Aroclor 1232	ND (0.194)	10	1	06/16/11 14:36	CF11515
Aroclor 1242	ND (0.194)	10	1	06/16/11 14:36	CF11515
Aroclor 1248	29.3 (1.94)	10	10	06/17/11 11:59	CF11515
Aroclor 1254	ND (0.194)	10	<u>1</u>	06/16/11 14:36	CF11515
Aroclor 1260	ND (0.194)	10	1	06/16/11 14:36	CF11515
Aroclor 1262	ND (0.194)	10	1	06/16/11 14:36	CF11515
Aroclor 1268	ND (0.194)	10	1	06/16/11 14:36	CF11515

Ouslifier

	20KeCOVery	Quanici	LITTIG
Surrogate: Decachlorobiphenyl	118 %		30-150
Surrogate: Decachlorobiphenyl [2C]	125 %		30-150
Surrogate: Tetrachloro-m-xylene	98 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	92 %		<i>30-150</i>



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-18 Date Sampled: 06/09/11 16:20

Percent Solids: Initial Volume: 5.3 Final Volume: 10 Extraction Method: 3540

ESS Laboratory Work Order: 1106132 ESS Laboratory Sample ID: 1106132-03

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/15/11 15:30

•		RI - RES D	EC		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.207)	10	1	06/16/11 15:22	CF11515
Aroclor 1221	ND (0.207)	10	1	06/16/11 15:22	CF11515
Aroclor 1232	ND (0.207)	10	1	06/16/11 15:22	CF11515
Aroclor 1242	ND (0.207)	10	1	06/16/11 15:22	CF11515
Arocler 1248	0.645 (0.207)	10	1	06/16/11 15:22	CF11515
Aroclor 1254	ND (0.207)	10	1	06/16/11 15:22	CF11515
Aroclor 1260	ND (0.207)	10	1	06/16/11 15:22	CF11515
Aroclor 1262	ND (0.207)	10	1	06/16/11 15:22	CF11515
Aroclor 1268	ND (0.207)	10	1	06/16/11 15:22	CF11515
	%Recovery Qualifit	er Limits			

Surrogate: Decachlorobiphenyl	86 %	30-150
Surrogate: Decachlorobiphenyl [2C]	87 %	30-150
Surrogate: Tetrachloro-m-xylene	88 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	88 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

91

Client Project ID: SK Cranston Client Sample ID: VB-19 Date Sampled: 06/09/11 16:23

Percent Solids: Initial Volume: 5

Final Volume: 5

Extraction Method: 3540

ESS Laboratory Work Order: 1106132 ESS Laboratory Sample ID: 1106132-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/15/11 15:30

8082 Polychlorinated Biphenyls (PCB)

DI	D	TC	173	FC

Limite

	•				
Analyte Aroclor 1016	Results (MRL) ND (0.220)	<u>Limit</u> 10	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> <u>Sequence</u> 06/16/11 16:00	Batch CF11515
Aroclor 1221	ND (0.220)	10	1	06/16/11 16:00	CF11515
Aroelor 1232	ND (0.220)	10	1	06/16/11 16:00	CF11515
Aroclor 1242	ND (0.220)	10	1	06/16/11 16:00	CF11515
Aroclor 1248	ND (0.220)	10	1	06/16/11 16:00	CF11515
Aroclor 1254	ND (0.220)	10	1	06/16/11 16:00	CF11515
Aroclor 1260	ND (0.220)	10	1	06/16/11 16:00	CF11515
Aroclor 1262	ND (0.220)	10	1	06/16/11 16:00	CF11515
Aroclor 1268	ND (0.220)	10	1	06/16/11 16:00	CF11515

Qualifier

	Junecovery	Quomici	2771143
Surrogate: Decachlorobiphenyl	99 %		30-150
Surrogate: Decachlorobiphenyl [2C]	97 %		30-150
Surrogate: Tetrachloro-m-xylene	<i>87 %</i>		30-150
Surrogate: Tetrachloro-m-xylene [2C]	90 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-20

Date Sampled: 06/09/11 16:26 Percent Solids: 91

Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106132 ESS Laboratory Sample ID: 1106132-05

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/15/11 15:30

RI	_	RES	DEC

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.211)	10	1	06/16/11 16:38	CF11515
Aroclor 1221	ND (0.211)	10	1	06/16/11 16:38	CF11515
Aroclor 1232	ND (0.211)	10	1	06/16/11 16:38	CF11515
Aroclor 1242	ND (0.211)	10	1	06/16/11 16:38	CF11515
Aroclor 1248	ND (0.211)	10	1	06/16/11 16:38	CF11515
Aroclor 1254	0.272 (0.211)	10	1	06/16/11 16:38	CF11515
Aroclor 1260	ND (0.211)	10	1	06/16/11 16:38	CF11515
Aroclor 1262	ND (0.211)	10	Ī	06/16/11 16:38	CF11515
Aroclor 1268	ND (0.211)	10	1	06/16/11 16:38	CF11515

	%Recovery	Quaimer	Limits
Surrogate: Decachlorobiphenyl	94 %		30-150
Surrogate: Decachlorobiphenyl [2C]	96 %		30-150
Surrogate: Tetrachloro-m-xylene	91 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	93 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-21 Date Sampled: 06/09/11 16:29

Percent Solids: 9 Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106132 ESS Laboratory Sample ID: 1106132-06

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/15/11 15:30

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.211)	10	1	06/16/11 17:15	CF11515
Aroclor 1221	ND (0.211)	10	1	06/16/11 17:15	CF11515
Aroclor 1232	ND (0.211)	10	1	06/16/11 17:15	CF11515
Aroclor 1242	ND (0.211)	10	1	06/16/11 17:15	CF11515
Aroclor 1248	ND (0.211)	10	1	06/16/11 17:15	CF11515
Aroclor 1254	ND (0.211)	10	1	06/16/11 17:15	CF11515
Aroclor 1260	0.405 (0.211)	10	1	06/16/11 17:15	CF11515
Aroclor 1262	ND (0.211)	10	1	06/16/11 17:15	CF11515
Aroclor 1268	ND (0.211)	10	1	06/16/11 17:15	CF11515

	%Recovery	Qualifier	Limits
Surrogata: Decachlorobiphenyl	94 %		30-150
Surrogate: Decachiorobiphenyl [2C]	94 %		30-150
Surrogate: Tetrachloro-m-xylene	96 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	98 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Client Sample ID: VB-22 Date Sampled: 06/09/11 16:32

Percent Solids: 95 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106132 ESS Laboratory Sample ID: 1106132-07

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/15/11 15:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DI	E C		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.206)	10	1	06/16/11 17:53	CF11515
Aroclor 1221	ND (0.206)	10	1	06/16/11 17:53	CF11515
Aroclor 1232	ND (0.206)	10	1	06/16/11 17:53	CF11515
Aroclor 1242	ND (0.206)	10	1	06/16/11 17:53	CF11515
Aroclor 1248	ND (0.206)	10	1	06/16/11 17:53	CF11515
Aroclor 1254	ND (0.206)	10	1	06/16/11 17:53	CF11515
Aroclor 1260	ND (0.206)	10	1	06/16/11 17;53	CF11515
Aroclor 1262	ND (0.206)	10	1	06/16/11 17:53	CF11515
Arocler 1268	ND (0.206)	10	1	06/16/11 17:53	CF11515

Oualiflor

Limite

	Miccorciy	Quanties	LITTICS
Surrogate: Decachlorobiphenyl	99 %		30-150
Surrogate: Decachlorobiphenyl [2C]	95 %		30-150
Surrogate: Tetrachloro-m-xylene	<i>88</i> %		30-150
Surrogate: Tetrachioro-m-xylene [2C]	92 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-23 Date Sampled: 06/09/11 16:35

Percent Solids: Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

91

ESS Laboratory Work Order: 1106132 ESS Laboratory Sample ID: 1106132-08

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/15/11 15:30

8082 Polychlorinated Biphenyls (PCB)

TOR		**	TO CO	DE	-
ĸ	-	к		1 3 K	•

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.211)	<u>Limit</u>	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> <u>Sequence</u> 06/16/11 18:31	Batch CF11515
Aroclor 1221	ND (0.211)	10	1	06/16/11 18:31	CF11515
Aroclor 1232	ND (0.211)	10	1	06/16/11 18:31	CF11515
Aroclor 1242	ND (0.211)	10	1	06/16/11 18:31	CF11515
Aroclor 1248	ND (0.211)	10	1	06/16/11 18:31	CF11515
Aroclor 1254	1.09 (0.211)	10	1	06/16/11 18:31	CF11515
Aroclor 1260	ND (0.211)	10	1	06/16/11 18:31	CF11515
Aroclor 1262	ND (0.211)	10	I	06/16/11 18:31	CF11515
Aroclor 1268	ND (0.211)	10	1	06/16/11 18:31	CF11515

Qualifier

	70710407017	Quantu.	Limito
Surrogate; Decachlorobiphenyl	88 %		30-150
Surrogate: Decachlorobiphenyl [2C]	89 %		30-150
Surrogate: Tetrachloro-m-xylene	94 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	88 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-24 Date Sampled: 06/09/11 16:38

Percent Solids: 93 Initial Volume: 5.2 Final Volume: 10 Extraction Method: 3540

Aroelor 1262

Aroclor 1268

ESS Laboratory Work Order: 1106132 ESS Laboratory Sample ID: 1106132-09

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/15/11 15:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES D	EC		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.207)	10	1	06/16/11 21:01	CF11515
Aroclor 1221	ND (0.207)	10	1	06/16/11 21:01	CF11515
Aroclor 1232	ND (0.207)	10	1	06/16/11 21:01	CF11515
Aroclor 1242	ND (0.207)	10	1	06/16/11 21:01	CF11515
Aroclor 1248	1.17 (0.207)	10	1	06/16/11 21:01	CF11515
Aroclor 1254	ND (0.207)	10	1	06/16/11 21:01	CF11515
Aroclor 1260	ND (0.207)	10	1	06/16/11 21:01	CF11515

10

10

1

	%Recovery	Qualitier	Limits
Surrogate: Decachlorobiphenyl	99 %		30-150
Surrogate: Decachlorobiphenyl [2C]	98 %		30-150
Surrogate: Tetrachloro-m-xylene	96 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	97 %		30-150

ND (0.207)

ND (0.207)

06/16/11 21:01

06/16/11 21:01

CF11515

CF11515



The Microbiology Division of Thielsch Engineering, Inc.



RPD

CERTIFICATE OF ANALYSIS

185 Frances Avenue, Cranston, RI 02910-2211

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106132

%REC

Quality Control Data

Spike

Source

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	R₽D	KPD Limit	Qualifie
		8082 Polyc	hlorinated B	iphenyls ((PCB)					
atch CF11515 - 3540										
lank										
Aroclor 1016	ND	0.0500	mg/kg wet							
roclor 1221	ND	0.0500	mg/kg wet							
roclor 1232	ND	0.0500	mg/kg wet							
roclor 1242	ND	0.0500	mg/kg wet							
roclor 1248	ND	0.0500	mg/kg wet							
roclor 1254	ND	0.0500	mg/kg wet							
roclor 1260	ND	0,0500	mg/kg wet							
roclor 1262	ND	0.0500	mg/kg wet							
roclor 1268	ND	0.0500	mg/kg wet							
urrogate: Decachlorobiphenyl	0.0248		mg/kg wet	0.02500		99	30-150			
Gurrogate: Decachlorobiphenyl [2C]	0.0232		mg/kg wet	0.02500		93	30-150			
urrogate: Tetrachloro-m-xylene	0.0226		mg/kg wet	0.02500		90	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0233		mg/kg wet	0.02500		93	30-150			
CS										
roclor 1016	0.419	0.0500	mg/kg wet	0.5000		84	40-140			
roclor 1260	0.432	0.0500	mg/kg wet	0,5000		86	40-140			
Secretary Description of	0,0255		mg/kg wet	0.02500		102	30-150			
Surrogate: Decachlorobiphenyl	0.0238		mg/kg wet	0.02500		95	30-150			
Surrogate: Decachiorobiphenyl [2C]	0.0239		mg/kg wet	0,02500		96	30-150			
Surrogate: Tetrachloro-m-xylene	0.0235		mg/kg wet	0.02500		94	30-150			
Gurrogate: Tetrachloro-m-xylene [2C]	0,0235		ng/ng tree	0.02300			20 120			
CS Dup										
Aroclor 1016	0.446	0.0500	mg/kg wet	0.5000		89	40-140	6	50	
croclor 1260	0.452	0.0500	mg/kg wet	0.5000		90	40-140	4	50	
Surrogate: Decachlorobiphenyl	0.0265		mg/kg wet	0.02500		106	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0248		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene	0.0254		mg/kg wet	0.02500		102	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0251		mg/kg wet	0.02500		100	30-150			
fatrix Spike Source: 1106132-09										
roctor 1016	2.85	0.215	mg/kg dry	2.151	ND	132	40-140			
kroclor 1260	1.98	0.215	mg/kg dry	2.151	ND	92	40-140			
Gurrogate: Decachlorobiphenyl	0.112		mg/kg dry	0.1075		104	30-150			-
Surrogate: Decachlorobiphenyl [2C]	0.110		mg/kg dry	0.1075		102	30-150			
Surrogate: Tetrachloro-m-xylene	0.115		mg/kg dry	0.1075		107	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.111		mg/kg dry	0.1075		103	30-150			
Matrix Spike Dup Source: 1106132-09										
Aroclor 1016	2.38	0.211	mg/kg dry	2.108	ND	113	40-140	18	50	
Aroclor 1260	2.03	0.211	mg/kg dry	2.108	ND	96	40-140	2	50	
	0.105		malka dar	0.1054		100	20 100			
Surrogate: Decachlorobiphenyl	0.105		mg/kg dry	0.1054		100	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.103		mg/kg dry	0.1054		98	<i>30-150</i>			

Tel: 401-461-7181

Dependability

Fax: 401-461-4486

http://www.ESSLaboratory.com



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106132

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
		8082 Polyc	hlorinated B	iphenyls	(PCB)					
Batch CF11515 - 3540				<u>, , , , , , , , , , , , , , , , , , , </u>						
Surrogate: Tetrachloro-m-xylene [2C]	0.103		mg/kg drγ	0.1054		98	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106132

Notes and Definitions

U	Analyte included in the analysis, but not detected
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106132

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwg/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water; M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Woodard & Curran

Client Project ID: _____ Shipped/Delivered Via:

Client

ESS Project ID: 11060132
Date Project Due: 6/17/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: 4.6		16. Are ESS labels on correct containers?	Yes
Iced With: Ice		17. Were samples received intact?	YesiNo
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	_
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	
18. Was there need to call project manage	er to disc	cuss status? If yes, please explain.	
Who was called?:	······································	' By whom?	

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative	
1	Yes	4 oz Soil Jar	1	NP	
2	Yes	4 oz Soil Jar	1	NP	
3	Yes	4 oz Soil Jar	1	NP	
4	Yes	4 oz Soil Jar	1	NP	
5	Yes	4 oz Soil Jar	1	NP	
6	Yes	4 oz Soil Jar	1	NP	
7	Yes	4 oz Soil Jar	1	NP	
8	Yes	4 oz Soil Jar	1	NP	
9	Yes	4 oz Soil Jar 🦯	1 1 1	NP	
Completed By:	1K c	ate/Time:	10/11		
Reviewed By:	<u> </u>	ate/Time: <i>6//.</i>	111		

CHAIN OF CUSTODY

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 ESS Laboratory

Other. Circle and/orWrite Required Analysis PDF MCP-METALS (13) WELVTS (13) WCF *NBC*2 ACTS-BCK48 Access TAL23 RCRAS FIJA RCRA8 Electronic Deliverable PAH 8270 90AS 0278 529 Reporting Limits Format: Excel 809 808 I soppissed 803 Perticides 2808 809 > ™byH³ EbH mo BVH EbH भगात है सरस DBO 8012 8100 EFE ยงชิงขา/ก 8015 8015 8021 MTBE/BTEX Ндл 8560 8560 Z.≱25 y79 C Turn Time

A. Standard

Other

If faster than 5 days, prior approval by laboratory is required # Type of Containers C Š 5 J J 9 Q Other Number of Containers Other Code Pres Is this project for any of the following:
MA-MCP Navy USACE State where samples were collected from:

MA (R) CT NH NJ NY ME SAFETY KIEEN Project Name (20 Char, or less) Sample Identification (20 Char. or less) STREET PO# Email Address CEDMA Zip (22703) 01-20 VB-22 VB-18 VB-19 VB-20 VB-23 219363 VB- 2 1-30 5087 Address 95 Project # V S S n (1) V MATRIX × × X X × CEVE \$ COMP Fax# State 1632 Collection 1626 1635 (623 Time 1505 010 1620 Woodard & Curpan 679 www.esslaboratory.com Contact Person City Pourden ce 401 273 (007 11/6/9 11150 100 100 11/6/9 1159 11 | 6 | 9 <u>=</u> 9 Felephone # Co. Name ESS LAB Sample # 5 0 70

Container Type: P-Poly (G-Glass S-Sterile V-V	OA Matrix: S-Soil SD-S	olid D-Sludge WW-W	Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters	W-Drinking Water O-Oil W-Wipes F-Filters
Cooler Present	s No	Internal Use Only	Preservation Code 1- N	Preservation Code 1- NP, 2- HCI, 3- HsOo, 4- HNOs, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9-	7- Asorbic Acid, 8- ZnAct, 9-
Seals Intact (, Ye	s No NA: X [1 Pickup		Sampled by: SEAN DRISCOL	Drixac	
Cooler Temp:	ice	[] Technicians	Comments: RB	RB 8082 WITH 3540 EXTRACTION	Ş
Relinquished by (Signatur	diolu 1250	Received by: (Mengure)	250/ Mare/Times	Molta Date/Time Relinquished by: (Signature) Date/Time Re	Received by: (Signature) Date/Time
Relinquished by: (Signature)	e) Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature) Date/Time Re	Received by: (Signature) Date/Time

J

NB-24

1638

69 =

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

10/26/04 B 1 (White) Lab Copy 2 (Yellow) Client Receipt



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1106217

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director



Digitally signed by Laurel Stoddard Date: 2011.06.24 11:07:49 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106217

SAMPLE RECEIPT

The following samples were received on June 17, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	<u>SampleName</u>	<u>Matrix</u>	Analysis
1106217-01	SW-25	Soil	8082
1106217-02	SW-26	Soil	8082
1106217-03	SW-27	Soil	8082
1106217-04	SW-28	Soil	8082
1106217-05	SW-29	Soil	8082
1106217-06	VB-25	Soil	8082
1106217-07	VB-26	Soil	8082
1106217-08	VB-27	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106217

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1106217-01

Surrogate recovery(ies) diluted below the MRL (SD).

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene

(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1106217-02

Surrogate recovery(ies) diluted below the MRL (SD).

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene

(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1106217-04

Surrogate recovery(ies) diluted below the MRL (SD).

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene

(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1106217-05

Surrogate recovery(ies) diluted below the MRL (SD).

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene

(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-25 Date Sampled: 06/17/11 14:05

Percent Solids: Initial Volume: 5.3 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106217 ESS Laboratory Sample ID: 1106217-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/20/11 16:00

8082 Polychlorinated Biphenyls (PCB)

				RI - RES D	EC		
<u>Analyte</u>	Results (MRL)			<u>Limit</u>	$\overline{\mathbf{DF}}$	Analyzed Sequence	Batch
Aroclor 1016	ND (4.72)			10	20	06/22/11 22:04	CF12020
Aroclor 1221	ND (4.72)			10	20	06/22/11 22:04	CF12020
Aroclor 1232	ND (4.72)			10	20	06/22/11 22:04	CF12020
Aroclor 1242	ND (4.72)			10	20	06/22/11 22:04	CF12020
Aroclor 1248	70.8 (4.72)			10	20	06/22/11 22:04	CF12020
Aroclor 1254	ND (4.72)			10	20	06/22/11 22:04	CF12020
Aroclor 1260	ND (4.72)			10	20	06/22/11 22:04	CF12020
Aroclor 1262	ND (4.72)			10	20	06/22/11 22:04	CF12020
Aroclor 1268	ND (4.72)			10	20	06/22/11 22:04	CF12020
		%Recovery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl		%	SD	30-150			
Surrogate: Decachlorobiphenyl [2C]		%	SD	<i>30-150</i>			

	on a corary	Quanner.	Zirrita
Surrogate: Decachlorobiphenyl	%	SD	<i>30-150</i>
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-15 0
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	OL	SD	20 150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-26 Date Sampled: 06/17/11 14:09

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106217 ESS Laboratory Sample ID: 1106217-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/20/11 16:00

8082 Polychlorinated Biphenyls (PCB)

TAT		TARSO	DEC
KI	-	RES	DEC

Limits

Analyte Aroclor 1016	Results (MRL) ND (25.8)	Limit 10	<u>DF</u> 100	<u>Analyzed</u> <u>Sequence</u> 06/22/11 23:01	Batch CF12020
Aroclor 1221	ND (25.8)	10	100	06/22/11 23:01	CF12020
Aroclor 1232	ND (25.8)	10	100	06/22/11 23:01	CF12020
Aroclor 1242	ND (25.8)	10	100	06/22/11 23:01	CF12020
Aroclor 1248	468 (25.8)	10	100	06/22/11 23:01	CF12020
Aroclor 1254	ND (25.8)	10	100	06/22/11 23:01	CF12020
Arocior 1260	ND (25.8)	10	100	06/22/11 23:01	CF12020
Aroclor 1262	ND (25.8)	10	100	06/22/11 23:01	CF12020
Aroclor 1268	ND (25.8)	10	100	06/22/11 23:01	CF12020

Qualifier

	•	=	
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

%Recovery

Quality



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-27 Date Sampled: 06/17/11 14:14

Percent Solids: 90 Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106217 ESS Laboratory Sample ID: 1106217-03

Sample Matrix: Soil Units: mg/kg dry Analyst: SEP

Prepared: 6/20/11 16:00

8082 Polychlorinated Biphenyls (PCB)

Analyte Aroclor 1016	<u>Results (MRL)</u> ND (0.214)	<u>Limit</u> 10	<u>DF</u>	Analyzed Sequence 06/21/11 19:33	Batch CF12020
Aroclor 1221	ND (0.214)	10	1	06/21/11 19:33	CF12020
Aroclor 1232	ND (0.214)	10	1	06/21/11 19:33	CF12020
Aroclor 1242	ND (0.214)	10	1	06/21/11 19:33	CF12020
Aroclor 1248	10.2 (2.14)	10	10	06/22/11 23:20	CF12020
Aroclor 1254	17.0 (2.14)	10	10	06/22/11 23;20	CF12020
Aroclor 1260	ND (0.214)	10	1	06/21/11 19:33	CF12020
Aroclor 1262	ND (0.214)	10	1	06/21/11 19:33	CF12020
Aroclor 1268	ND (0.214)	10	1	06/21/11 19:33	CF12020

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	110 %		30-150
Surrogate: Decachlorobiphenyl [2C]	120 %		30-150
Surrogate: Tetrachloro-m-xylene	96 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	105 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-28 Date Sampled: 06/17/11 14:18

Percent Solids: 9 Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106217 ESS Laboratory Sample ID: 1106217-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/20/11 16:00

8082 Polychlorinated Biphenyls (PCB)

RI		DI	n	T.	_
HC S	_	н з		II.	Ł

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (4.23)	10	20	06/22/11 23:39	CF12020
Aroclor 1221	ND (4.23)	10	20	06/22/11 23:39	CF12020
Aroclor 1232	ND (4.23)	10	20	06/22/11 23:39	CF12020
Aroclor 1242	ND (4.23)	10	20	06/22/11 23:39	CF12020
Aroclor 1248	80.6 (4.23)	10	20	06/22/11 23:39	CF12020
Aroelor 1254	ND (4.23)	10	20	06/22/11 23:39	CF12020
Aroclor 1260	ND (4.23)	10	20	06/22/11 23:39	CF12020
Aroclor 1262	ND (4.23)	10	20	06/22/11 23:39	CF12020
Aroclor 1268	ND (4.23)	10	20	06/22/11 23:39	CF12020

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachioro-m-xylene [2C]	%	5D	<i>30-150</i>



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-29 Date Sampled: 06/17/11 14:20

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106217 ESS Laboratory Sample ID: 1106217-05

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/20/11 16:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DI	EC		
Analyte	Results (MRL)	<u>Limit</u>	$\underline{\mathbf{DF}}$	Analyzed Sequence	Batch
Aroclor 1016	ND (4.44)	10	20	06/22/11 17:03	CF12020
Aroclor 1221	ND (4.44)	10	20	06/22/11 17:03	CF12020
Aroclor 1232	ND (4.44)	10	20	06/22/11 17:03	CF12020
Aroclor 1242	ND (4.44)	10	20	06/22/11 17:03	CF12020
Aroclor 1248	47.1 (4.44)	10	20	06/22/11 17:03	CF12020
Aroclor 1254	78.9 (4.44)	10	20	06/22/11 17:03	CF12020
Aroclor 1260	ND (4.44)	10	20	06/22/11 17:03	CF12020
Aroclor 1262	ND (4.44)	10	20	06/22/11 17:03	CF12020
Aroclor 1268	ND (4.44)	10	20	06/22/11 17:03	CF12020

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-25 Date Sampled: 06/17/11 14:25

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106217 ESS Laboratory Sample ID: 1106217-06

Sample Matrix: Soil Units: mg/kg dry Analyst: SEP

Prepared: 6/20/11 16:00

8082 Polychlorinated Biphenyls (PCB)

RI	- RES	DEC

Limite

Analyte Aroclor 1016	Results (MRL) ND (0.248)	Limit 10	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> <u>Sequence</u> 06/21/11 21:26	Batch CF12020
Aroclor 1221	ND (0.248)	10	1	06/21/11 21:26	CF12020
Aroclor 1232	ND (0.248)	10	1	06/21/11 21:26	CF12020
Aroclor 1242	ND (0.248)	10	1	06/21/11 21:26	CF12020
Aroclor 1248	0.663 (0.248)	10	1	06/21/11 21:26	CF12020
Aroclor 1254	0.494 (0.248)	10	1	06/21/11 21:26	CF12020
Aroclor 1260	ND (0.248)	10	1	06/21/11 21:26	CF12020
Aroclor 1262	ND (0.248)	10	1	06/21/11 21:26	CF12020
Aroclor 1268	ND (0.248)	10	1	06/21/11 21:26	CF12020

Qualifier

	Miccorety	Quanter	21/11/03
Surrogate: Decachlorobiphenyl	110 %		30-150
Surrogate: Decachiorobiphenyl [ZC]	130 %		30-150
Surrogate: Tetrachloro-m-xylene	97 %		<i>30-150</i>
Surrogate: Tetrachloro-m-xylene [2C]	96 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-26 Date Sampled: 06/17/11 14:30

Percent Solids: 86 Initial Volume: 5.3 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106217 ESS Laboratory Sample ID: 1106217-07

Sample Matrix: Soil Units: mg/kg dry Analyst: SEP

Prepared: 6/20/11 16:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	EC		
<u>Analyte</u>	Results (MRL)	Limit	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.219)	10	1	06/21/11 22:04	CF12020
Aroclor 1221	ND (0.219)	10	1	06/21/11 22:04	CF12020
Aroclor 1232	ND (0.219)	10	1	06/21/11 22:04	CF12020
Aroclor 1242	ND (0.219)	10	1	06/21/11 22:04	CF12020
Aroclor 1248	2.30 (0.219)	10	1	06/21/11 22:04	CF12020
Aroclor 1254	2.19 (0.219)	10	1	06/21/11 22:04	CF12020
Aroclor 1260	ND (0.219)	10	1	06/21/11 22:04	CF12020
Aroclor 1262	ND (0.219)	10	1	06/21/11 22:04	CF12020
Aroclor 1268	ND (0.219)	10	1	06/21/11 22:04	CF12020

Qualifier

Limits

Surrogate: Decachlorobiphenyl	118 %	30-150
Surrogate: Decachlorobiphenyl [2C]	125 %	30-150
Surrogate: Tetrachloro-m-xylene	103 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	101 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-27 Date Sampled: 06/17/11 14:35

Percent Solids: Initial Volume: 5.3 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106217 ESS Laboratory Sample ID: 1106217-08

Sample Matrix: Soil Units: mg/kg dry Analyst: SEP

Prepared: 6/20/11 16:00

8082 Polychlorinated Biphenyls (PCB)

nt		marco	DEC
ĸŧ	_	H S	DEC

Analyte Aroclor 1016	Results (MRL) ND (0.239)	Limit	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> <u>Sequence</u> 06/21/11 22:42	Batch CF12020
Aroclor 1221	ND (0.239)	10	1	06/21/11 22:42	CF12020
Aroclor 1232	ND (0.239)	10	1	06/21/11 22:42	CF12020
Aroclor 1242	ND (0.239)	10	1	06/21/11 22:42	CF12020
Aroclor 1248	0.674 (0.239)	10	1	06/21/11 22:42	CF12020
Arecler 1254	0.653 (0.239)	10	ĺ	06/21/11 22:42	CF12020
Aroclor 1260	ND (0.239)	10	1	06/21/11 22:42	CF12020
Aroelor 1262	ND (0.239)	10	1	06/21/11 22:42	CF12020
Aroclor 1268	ND (0.239)	10	1	06/21/11 22:42	CF12020

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobíphenyl	116 %		30-150
Surrogate: Decachlorobiphenyl [2C]	109 %		30-150
Surrogate: Tetrachloro-m-xylene	85 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	104 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106217

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

Batch CF12020 - 3540									
Blank									
Aroclor 1016	ND	0.0500	mg/kg wet				***************************************	NEWS AND ADDRESS OF THE PARTY O	
Arodor 1221	ND	0.0500	mg/kg wet						
Aroclor 1232	ND	0.0500	mg/kg wet						
Aroclor 1242	ND	0.0500	mg/kg wet						
Aroclor 1248	ND	0.0500	mg/kg wet						
Aroclor 1254	ND	0.0500	mg/kg wet						
Aroclor 1260	ND	0.0500	mg/kg wet						
Aroclor 1262	ND	0.0500	mg/kg wet						
Aroclor 1268	ND	0.0500	mg/kg wet						
Surrogate: Decachlorobiphenyl	0.0253		mg/kg wet	0.02500	101	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0240		mg/kg wet	0.02500	96	30-150			
Surrogate: Tetrachloro-m-xylene	0.0226		mg/kg wet	0.02500	90	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0234		mg/kg wet	0.02500	93	30-150			
LCS								*****	
Arodor 1016	0.448	0.0500	mg/kg wet	0,5000	90	40-140			
Arodor 1260	0.451	0,0500	mg/kg wet	0.5000	90	40-140			
Surrogate: Decachlorobiphenyl	0.0274		mg/kg wet	0.02500	110	30-150			
Surrogate: Decachlorobiphenyl [2C]	0,0260		mg/kg wet	0.02500	104	30-150			
Surrogate: Tetrachloro-m-xylene	0.0262		mg/kg wet	0.02500	105	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0257		mg/kg wet	0.02500	103	30-150			
LCS Dap									
Aroclor 1016	0.459	0.0500	mg/kg wet	0.5000	92	40-140	2	50	
Arodor 1260	0.466	0.0500	mg/kg wet	0.5000	93	40-140	3	50	
Surrogate: Decachlorobiphenyl	0.0280		mg/kg wet	0.02500	112	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0266		mg/kg wet	0.02500	106	30-150			
Surrogate: Tetrachloro-m-xylene	0.0261		mg/kg wet	0.02500	104	30-150			
Surrogate: Tetrachioro-m-xylene [2C]	0.0255		mg/kg wet	0.02500	102	30-150			



Analyte included in the analysis, but not detected

BAL Laboratory

The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

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ESS Laboratory Work Order: 1106217

Notes and Definitions

SD	Surrogate recovery(ies) diluted below the MRL (SD).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106217

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-R1002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Woodard & Curran
Client Project ID:
Shipped/Delivered Via: Client

ESS Project ID: 11060217
Date Project Due: 6/24/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: 2.4		16. Are ESS labels on correct containers?(Yes No
Iced With: Ice		17. Were samples received intact?	Yes No
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	
18. Was there need to call project manag	er to discu	ss status? If yes, please explain.	
Who was called?:		By whom?	

				-	
Sample Number	Properly Preserved	Container Type	# of Containers	Preservative	
1	Yes	4 oz Soil Jar	1	NP	
2	Yes	4 oz Soil Jar	1	NP	
3	Yes	4 oz Soil Jar	1	NP	
4	Yes	4 oz Soil Jar	1	NP	
5	Yes	4 oz Soil Jar	1	NP	
6	Yes	4 oz Soil Jar	1	NP	
7	Yes	4 oz Soil Jar	1	NP	
8	Yes	4 oz Soil Jar	, 1	NP	
Completed By:).K D	ate/Time: <u>6//</u>	17/11		
Reviewed By:		ate/Time:	71,		

CHAIN OF CUSTODY

Reporting Limits If faster than 5 days, prior approval by laboratory is required # Other State where samples were collected from:

MA (RI) CT NH NJ NY ME

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211

ESS Laboratory

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

Co. Name

Electronic Deliverable Is this project for any of the following:

MA-MCP Navy USACE

Other Project Name (20 Char. or less)

Format Excel Access

Other

PDF

Circle and/orWrite Required Analysis

TAL23 धावव **RCRA8** 979 HAqьсв **ео**8 809 Pesticides FCB 8082 12521(7) Ная

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274.2

Safery Kleey

219303 Project #

Woodhad & Curren

MCP-METALS (13)

NBC2

भाषतान सर्वे DΒΟ 8012 8100 H4T

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Type of Containers

Number of Containers

Email Address

02463

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Fax#

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Giy Rovidence

Sow

TAKELLE Contact Person

%

Address Canar

HVH OM EbH

1808 Perticides

RCRAS

WELVTS (13) WCb-

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Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Preservation Code (-N) 2- HC1, 3- HSO, 4- HNO, 5- NaOH, 6- McOH, 7- Asorbic Acid, 8- ZnAct, 9-

1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

1/1/153S Date/Time

Received by: (Signature)

5251 11/21/2

Date/Time

Relinquished by: (Signature)

Page 16 of 16

Date/Time

V: Signature)

[] Technicians__

3

Cooler Temp: 24

Date/Time

Received by: (Signature)

8082 with 3540 Extraction

SEAT DESCOL

Sampled by: Comments:

Internal Use Only

X_{Yes} No

Cooler Present Seals Intact

__No NA: X [] Pickup

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Please fax all changes to Chain of Custody in writing.

*By circling MA-MCB, client acknowledges samples were collected in accordance with MADEP CAM VII A

Pres

Sample Identification (20 Char or less)

MATRIX

Collection

Date

Sample #

ESS LAB

401.273.1007

Time

CKYB COMP

Sw-25 SW-76 25/30 SW-28 SN-29

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The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1106241

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard Laboratory Director

Digitally signed by Laurel Stoddard Date: 2011.06.27 14:55:32 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106241

SAMPLE RECEIPT

The following samples were received on June 20, 2011 for the analyses specified on the enclosed Chain of Custody Record.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1106241-01	SW-30	Soil	8082
1106241-02	Dup-SW-30	Soil	8082
1106241-03	SW-31	Soil	8082
1106241-04	VB-28	Soil	8082
1106241-05	SW-32	Soil	8082
1106241-06	VB-16B	Soil	8082
1106241-07	VB-17B	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106241

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-30 Date Sampled: 06/20/11 11:30

Percent Solids: Initial Volume: 4.9 Final Volume: 10

Aroclor 1268

Extraction Method: 3540

ESS Laboratory Work Order: 1106241 ESS Laboratory Sample ID: 1106241-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/21/11 18:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	EC .			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.227)	10	1	06/23/11 1:13		CF12121
Aroclor 1221	ND (0.227)	10	1	06/23/11 1:13		CF12121
Aroclor 1232	ND (0.227)	10	1	06/23/11 1:13		CF12121
Aroclor 1242	ND (0.227)	10	1	06/23/11 1:13		CF12121
Aroclor 1248	ND (0.227)	10	1	06/23/11 1:13		CF12121
Aroclor 1254	ND (0.227)	10	1	06/23/11 1:13		CF12121
Aroclor 1260	ND (0.227)	10	1	06/23/11 1:13		CF12121
Aroclor 1262	ND (0.227)	10	1	06/23/11 1:13		CF12121

10

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	86 %		30-150
Surrogate: Decachiorobiphenyi [2C]	81 %		30-150
Surrogate: Tetrachioro-m-xylene	91 %		30-150
Surrogate: Tetrachioro-m-xylene [2C]	102 %		30-150

ND (0.227)

06/23/11 1:13

CF12121



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: Dup-SW-30 Date Sampled: 06/20/11 11:30

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106241 ESS Laboratory Sample ID: 1106241-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/21/11 18:30

8082 Polychlorinated Biphenyls (PCB)

TIT		DEC	TATE	~
ĸı	_	RES	1111	

Analyte Aroclor 1016	Results (MRL) ND (0.228)	<u>Limit</u> 10	<u>DF</u>	<u>Analyzed</u> 06/23/11 3:06	Sequence	Batch CF12121
Aroclor 1221	•	10	1	06/23/11 3:06		
Aroclor 1232	ND (0.228) ND (0.228)	10	1	06/23/11 3:06		CF12121
Aroclor 1242	ND (0.228)	10	1	06/23/11 3:06		CF12121 CF12121
Aroclor 1248	ND (0.228)	10	1	06/23/11 3:06		CF12121 CF12121
Arecler 1254	ND (0.228)	10	1	06/23/11 3:06		CF12121 CF12121
Aroclor 1260	ND (0.228)	10	1	06/23/11 3:06		CF12121 CF12121
Aroclor 1262	ND (0.228)	10	1	06/23/11 3:06		CF12121
Aroclor 1268	ND (0.228)	10	1	06/23/11 3:06		CF12121
	\					

Qualifier

	Miccovery	Quantier	Litting
Surrogate: Decachlorobiphenyl	107 %		30-150
Surrogate: Decachlorobiphenyl [2C]	100 %		30-150
Surrogate: Tetrachloro-m-xylene	93 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	101 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-31 Date Sampled: 06/20/11 11:35

Percent Solids: 8 Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106241 ESS Laboratory Sample ID: 1106241-03

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/21/11 18:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	EC			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>		equence	Batch
Aroclor 1016	ND (0.221)	10	1	06/23/11 3:44		CF12121
Aroclor 1221	ND (0.221)	10	1	06/23/11 3:44		CF12121
Aroclor 1232	ND (0.221)	10	1	06/23/11 3:44		CF12121
Aroclor 1242	ND (0.221)	10	1	06/23/11 3:44		CF12121
Aroclor 1248	ND (0.221)	10	1	06/23/11 3:44		CF12121
Aroclor 1254	ND (0.221)	10	1	06/23/11 3:44		CF12121
Aroclor 1260	ND (0.221)	10	1	06/23/11 3:44		CF12121
Aroclor 1262	ND (0.221)	10	1	06/23/11 3:44		CF12121
Aroclor 1268	ND (0.221)	10	1	06/23/11 3:44		CF12121

Qualifier

Limits

	·	
Surrogate: Decachlorobiphenyl	95 %	30-150
Surrogate: Decachlorobiphenyl [2C]	124 %	30-150
Surrogate: Tetrachloro-m-xylene	78 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	98 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

81

Client Project ID: SK Cranston Client Sample ID: VB-28 Date Sampled: 06/20/11 11:40

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106241 ESS Laboratory Sample ID: 1106241-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/21/11 18:30

8082 Polychlorinated Biphenyls (PCB)

TYE	TITC	TATIO
RI -	. KKS	DEC

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	$\overline{\mathbf{DF}}$	Analyzed Sequence	Batch
Aroclor 1016	ND (0.247)	10	1	06/23/11 4:21	CF12121
Aroclor 1221	ND (0.247)	10	1	06/23/11 4:21	CF12121
Aroclor 1232	ND (0.247)	10	1	06/23/11 4:21	CF12121
Aroclor 1242	ND (0.247)	10	1	06/23/11 4:21	CF12121
Aroclor 1248	6.30 (1.23)	10	5	06/23/11 4:21	CF12121
Aroclor 1254	ND (0.247)	10	1	06/23/11 4:21	CF12121
Aroclor 1260	ND (0.247)	10	1	06/23/11 4:21	CF12121
Aroclor 1262	ND (0.247)	10	1	06/23/11 4:21	CF12121
Aroclor 1268	ND (0.247)	10	1	06/23/11 4:21	CF12121

Qualifier

	Mecovery	Qualities	Littles
Surrogate: Decachlorobiphenyl	107 %		30-150
Surrogate: Decachlorobiphenyl [2C]	104 %		30-150
Surrogate: Tetrachloro-m-xylene	<i>59</i> %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	110 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-32 Date Sampled: 06/20/11 14:30

Percent Solids: 90 Initial Volume: 5 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106241 ESS Laboratory Sample ID: 1106241-05

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/21/11 18:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	E C		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Seque	ence <u>Batch</u>
Aroclor 1016	ND (0.222)	10	1	06/23/11 4:59	CF12121
Aroclor 1221	ND (0.222)	10	1	06/23/11 4:59	CF12121
Aroclor 1232	ND (0.222)	10	1	06/23/11 4:59	CF12121
Aroclor 1242	ND (0.222)	10	1	06/23/11 4:59	CF12121
Aroclor 1248	26.5 (2.22)	10	10	06/23/11 21:34	CF12121
Aroclor 1254	ND (0.222)	10	1	06/23/11 4:59	CF12121
Aroclor 1260	ND (0.222)	10	1	06/23/11 4:59	CF12121
Aroclor 1262	ND (0.222)	10	1	06/23/11 4:59	CF12121
Aroclor 1268	ND (0.222)	10	1	06/23/11 4:59	CF12121

Qualifier

Limits

Surrogate: Decachlorobiphenyl	99 %	30-150
Surrogate: Decachlorobiphenyl [2C]	110 %	30-150
Surrogate: Tetrachloro-m-xylene	<i>76</i> %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	91 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-16B Date Sampled: 06/20/11 14:35

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106241 ESS Laboratory Sample ID: 1106241-06

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/21/11 18:30

8082 Polychlorinated Biphenyls (PCB)

RI	_	RES	DEC

Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.211)	10	1	06/23/11 5:37	CF12121
Aroclor 1221	ND (0.211)	10	1	06/23/11 5:37	CF12121
Aroclor 1232	ND (0.211)	10	1	06/23/11 5:37	CF12121
Aroclor 1242	ND (0.211)	10	1	06/23/11 5:37	CF12121
Aroclor 1248	0.334 (0.211)	10	1	06/23/11 5:37	CF12121
Aroclor 1254	ND (0.211)	10	1	06/23/11 5:37	CF12121
Aroclor 1260	ND (0.211)	10	1	06/23/11 5:37	CF12121
Aroclor 1262	ND (0.211)	10	1	06/23/11 5:37	CF12121
Aroclor 1268	ND (0.211)	10	1	06/23/11 5:37	CF12121

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	115 %		30-150
Surrogate: Decachlorobiphenyl [2C]	111 %		30-150
Surrogate: Tetrachloro-m-xylene	103 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	105 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-17B Date Sampled: 06/20/11 14:40

Percent Solids: 89 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106241 ESS Laboratory Sample ID: 1106241-07

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/21/11 18:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DI	EC			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	Sequence	Batch
Aroclor 1016	ND (0.220)	10	1.	06/23/11 6:14	4	CF12121
Aroclor 1221	ND (0.220)	10	1	06/23/11 6:14	1	CF12121
Aroclor 1232	ND (0.220)	10	1	06/23/11 6:14	4	CF12121
Aroclor 1242	ND (0.220)	10	1	06/23/11 6:14	4	CF12121
Aroclor 1248	0.466 (0.220)	10	1	06/23/11 6:14	1	CF12121
Aroclor 1254	ND (0.220)	10	1	06/23/11 6:14	1	CF12121
Aroclor 1260	ND (0.220)	10	1	06/23/11 6:14	1	CF12121
Aroclor 1262	ND (0.220)	10	1	06/23/11 6:14	1	CF12121
Aroclor 1268	ND (0.220)	10	1	06/23/11 6:14	ļ	CF12121

Qualifier

Limits

Surrogate: Decachlorobiphenyl	108 %	30-150
Surrogate: Decachlorobiphenyl [2C]	101 %	30-150
Surrogate: Tetrachloro-m-xylene	90 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	93 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106241

Quality Control Data

											4
				Spike	Source		%REC		RPD		l
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier	

	8082	Poly	vchlorinated	Biphenyle	(PCB
--	------	------	--------------	-----------	------

Batch CF12121 - 3546	D										
Blank											
Aroclor 1016		ND	0.0500	mg/kg wet							
Aroclor 1221		ND	0.0500	mg/kg wet							
Arodor 1232		ND	0.0500	mg/kg wet							
Aroclor 1242		ND	0.0500	mg/kg wet							
Arodor 1248		ND	0.0500	mg/kg wet							
Aroclar 1254		ND	0.0500	mg/kg wet							
Aroclor 1260		ND	0.0500	mg/kg wet							
Aroclor 1262		ND	0.0500	mg/kg wet							
Aroclor 1268		ND	0.0500	mg/kg wet							
				119/15 1700							
Surrogate: Decachlorobi	phenyl	0.0284		mg/kg wet	0.02500		114	30-150			
Surrogate: Decachlorobi	phenyl [2C]	0.0257		mg/kg wet	0,02500		103	30-150			
Surrogate: Tetrachloro-i	n-xylene	0.0260		mg/kg wet	0.02500		104	30-150			
Surtogate: Tetrachloro-r		0.0269		mg/kg wet	0.02500		108	30-150			
LCS											
Aroclor 1016		0.479	0.0500	mg/kg wet	0.5000		95	40-140			
Aroclor 1260		0.477	0.0500	mg/kg wet	0.5000		95	40-140			
Surrogate: Decachlorobi	iphenyl	0.0301		mg/kg wet	0.02500		120	30-150			
Surrogate: Decachlorobi	iphenyl [2C]	0.0308		mg/kg wet	0.02500		123	<i>30-150</i>			
Surrogate: Tetrachloro-r	n-xylene	0.0266		mg/kg wet	0.02500		106	<i>30-150</i>			
Surrogate: Tetrachloro-i	n-xylene [2C]	0,0262		mg/kg wet	0.02500		105	30-150			
LCS Dup											
Aroclor 1016		0.497	0.0500	mg/kg wet	0.5000		99	40-140	4	50	
Aroclor 1260		0.509	0.0500	mg/kg wet	0.5000		102	40-140	7	50	
		0.0304		mag/len west	0.02500			20.150			
Surrogate: Decachlorobi		0.0300		mg/kg wet	0.02500		121	30-150			
Surrogate: Decachlorobi				mg/kg wet			120	30-150			
Surrogate: Tetrachloro-i	•	0.0274 0.0272		mg/kg wet	0.02500		110	30-150			
Surrogate: Tetrachloro-i		V.02/2		mg/kg wet	0.02500		109	30-150			
Matrix Spike	Source: 1106241-01										
Aroclor 1016		2.10	0.218	mg/kg dry	2.179	ND	96	40-140			
Aroclor 1260	189.1	2,03	0,218	mg/kg dry	2.179	ND	93	40-140			
Surrogate: Decachlorobi	inhenvl	0.116		mg/kg dry	0.1089		106	30-150			
Surrogate: Decachlorobi		0.104		mg/kg dry	0.1089		96	30-150			
Surrogate: Decachiorosi Surrogate: Tetrachlorosi		0.110		mg/kg dry	0.1089		101	30-150			
Surrogate: Tetrachloro-i	·	0.114		mg/kg dry	0.1089		104	30-150			
Matrix Spike Dup	Source: 1106241-01										
Aroclor 1016		2.31	0.222	mg/kg dry	2,222	ND	104	40-140	10	50	
Aroclor 1260		2.19	0.222	mg/kg dry	2.222	ND	99	40-140	8	50	
									-		
Surrogate: Decachlorobi	iphenyl	0.125		mg/kg dry	0.1111		112	30-150			
Surrogate: Decachlorob	iphenyl [2C]	0.116		mg/kg dry	0.1111		104	30-150			
Surrogate: Tetrachloro-i	m-xylene	0.109		mg/kg dry	0.1111		98	30-150			
	185 Frances Avenue,	Cranston RI 020	10-2211	Tel: 401-461-71	81 Fax	x: 401-461	-4486	http://www	ESSI aka	watoru com	
	105 i micos rivendo,	C. m. 100021, 101 0/29	10-2511	1 C1. TO1-TO1-/1	. v. 1.97	A. TUI "4UI	-7400	TRUED IV WWW	LUCLANC	a area y COIII	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106241

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
		8082 Polych	olorinated B	iphenyls	(PCB)				****	
Batch CF12121 - 3540	* ** TTAVE C SAME		THAI ALLES	THEMA						7111
Surrogate: Tetrachloro-m-xylene [2C]	0.119		mg/kg dry	0.1111		107	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106241

Notes and Definitions

\mathbf{U}	Analyte included in the analysis, but not detected
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
Ş	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106241

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/out state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mdc.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: R1002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

http://www.A2LA.org/dirscarchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client:	Woodard &	Curran	
Client P	roject ID:		
Shipped	I/Delivered \	/ia:	<u>Client</u>

ESS Project ID: 11060241
Date Project Due: 6/27/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: 2.4		16. Are ESS labels on correct containers?	Yes No
Iced With: Ice		17. Were samples received intact?	/es No
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	
18. Was there need to call project manage	er to discus	ss statue? If yes, please explain.	·
Who was called?:		By whom?	

		_ EDY VALIK	J1111;		
Sample Number	Properly Preserved	Container Type	# of Containers	Preservative	
1	Yes	4 oz Soil Jar	3	NP	
2	Yes	4 oz Soil Jar	Ī	NP	
3	Yes	4 oz Soil Jar	1	NP	
4	Yes	4 oz Soil Jar	1	NP	
5	Yes	4 oz Soil Jar	1	NP	
6	Yes	4 oz Soil Jar	1	NP	
7	1/ Yes	4 oz Soil Jar	1-11	NP	
Completed By:	D D	ate/Time:6	120/11		
Reviewed By:	2 D	ate/Time: <u>(o/</u>	20/11		

CHAIN OF CUSTODY

Reporting Limits

State where samples were collected from:
MA (R) CT NH NJ NY ME Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 ESS Laboratory

T. (401	781 (401) 461 7191 Bay (401) 461 4486	Boy (401) 46	7877	State win	are samples were collected from:	Ċ	;						2		
ICI: (TOI	1 101/-101	Or (TOE) vm	2011.7	SINI ,	THE TALL IN THE		Į,		Electro	Electronic Deliverable	ā e	Kes	_	No No	
www.ess	www.esslaboratory.com	-		Is this pr	Is this project for any of the following: MA-MCP Navy USACE	3 Other	er		Format:	Excel	Access	PDF	_ Other	1	
Co. Name				Project #	Project Name (20 Char. or less)					Circle and/orWrite Required Analysis	Write Reg	uired A	nalysis		
3	Woodpab & Cunapa	3		219303	Self-Ker						81	(8	,	ļ	
Contact Person	act Person Taylette Dovig			0	T. 75.		Sì	7.42. HQV 83800	Hď	608 PCB PAH 8270 8270		8 1.VTS (1:	-		
City Paovidence	Jake	Sare A		F. 20.	ı			Şī	0¥G 0¥G \$108	808 (Pesticites)	VBC)	H/m IW-IDI			<u></u>
Telephone #	lephone # 401, 273.i∞7	Fax #	# 401 273-Segn		Email Address			08		7808 7808	RCRA8	(E1. V			
ESS LAB Sample #	Date	Collection Time	COMP	Sample	Sample Identification (20 Char. or less)	Pres Code	Mumber Type of	826 NOA 18021 MTBE/BT	da	A obu 1808 Sobiored 728 OVS	RCRAS TCLP-RC	MELUTS WCI-			
Ō	ilozbi	11:30	×	Sw-30		1	1 2			X					
(A)	11/02/01	11:30	ΚS	-CUS -900	Š		1 64			*					
0	iilozlo)	1130	χS	S MS-SWS	<i>S</i>		1 6			<u>×</u>					:
0	॥ (व्यक्त)॥	051)	XS	MSD 500-30	30		Ŋ			%					\
03	11/02/07	1135	XS				i d			<u> </u>					
ト 0	11/02/9	1140	X S	vB-28	The state of the s		d,			×					
50	વિષ્યા	024	×	50.32		١,	, (5			×					
90	11/06/01	SSH	8 X	VB-163		į	2			×					
(2)	(drolu	1440	145				ا (3			メ					
Container	Container Type: P-Poly G-Glass S-Sterile V-VOA	lass S-Sterile V-	-VOA Matr	Matrix: S-Soil SD-Solid	D-Sludge WW-Waste Water	W-Grour	GW-Ground Water	SW-Surface Water	ce Wate	DW-Drinking Water	king Wate	r O-Oil		W-Wipes 1	F-Filters
Cooler Present	sent Xes	No N	Internal Use Only		Preservation Code 1- NP, 2- HC1, 3- H2SO4, 4- HNO,, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8-	H2SO4,	- HNO,	5- NaOH	, 6- Me	JH, 7. Asorb	ic Acid, 8	8- ZnAct,	.t, 9-		
Seals Intact	Yes	No NA:	🗲 (] Pickup		Sampled by: Sens Dalkour	7									
	` (L											

*By circling MA-MCB, client acknowledges samples were collected in acrondance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

10/26/04 B 1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

80,82 with 3540 Extransion

Comments:

[] Technicians_

Cooler Temp: 25 16

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

6/30/11/1525 Date/Time

Received by: (Signature)

42d11 1525 Darc/Time

Relinguened by Signature)

Date/Time

Date/Time

Received by: (Signature)

Refinquished by: (Signature)



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1106263

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director



Digitally signed by Laurel Stoddard Date: 2011.06.29 16:55:07 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106263

SAMPLE RECEIPT

The following samples were received on June 21, 2011 for the analyses specified on the enclosed Chain of Custody Record.

PCB: Sample Dup-SW-49 (1106263-29) was reported with elevated detection limits due to sample matrix interference. This interference had the characteristics of petroleum hydrocarbons. This duplicate sample had much higher levels of the interference than the associated sample. (SW-49/1106263-28)

Lab Number	SampleName	<u>Matrix</u>	Analysis
1106263-01	VB-29	Soil	8082
1106263-02	VB-30	Soil	8082
1106263-03	VB-31	Soil	8082
1106263-04	VB-32	Soil	8082
1106263-05	VB-33	Soil	8082
1106263-06	SW-33	Soil	8082
1106263-07	SW-34	Soil	8082
1106263-08	SW-35	Soil	8082
1106263-09	SW-36	Soil	8082
1106263-10	SW-37	Soil	8082
1106263-11	SW-38	Soil	8082
1106263-12	SW-39	Soil	8082
1106263-13	SW-40	Soil	8082
1106263-14	SW-41	Soil	8082
1106263-15	SW-42	Soil	8082
1106263-16	VB-34	Soil	8082
1106263-17	VB-35	Soil	8082
1106263-18	VB-36	Soil	8082
1106263-19	VB-37	Soil	8082
1106263-20	VB-2B	Soil	8082
1106263-21	Dup-VB-2B	Soil	8082
1106263-22	SW-43	Soil	8082
1106263-23	SW-44	Soil	8082
1106263-24	SW-45	Soil	8082
1106263-25	SW-46	Soil	8082
1106263-26	SW-47	Soil	8082
1106263-27	SW-48	Soil	8082
1106263-28	SW-49	Soil	8082
1106263-29	Dup-SW-49	Soil	8082
1106263-30	SW-50	Soil	8082
1106263-31	VB-38	Soil	8082
1106263-32	VB-39	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

1106263-33 VB

1106263-34

VB-40

Soil

ESS Laboratory Work Order: 1106263 8082

VB-41

Soil

8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106263

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1106263-24	Surrogate recovery(ies) diluted below the MRL (SD).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene
	(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1106263-29	Elevated Method Reporting Limits due to sample matrix (EL).
1106263-29	Surrogate recovery(ies) below lower control limit (S-).
	Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%)
1106263-34	Percent difference between primary and confirmation results exceeds 40% (P).
	Aroclor 1248

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-29 Date Sampled: 06/21/11 10:45

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

PΙ	- PFS	DEC

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.222)	Limit	<u>DF</u>	<u>Analyzed</u> <u>Sequence</u> 06/24/11 17:44	Batch CF12326
Aroclor 1221	ND (0.222)	10	1	06/24/11 17:44	CF12326
Aroclor 1232	ND (0.222)	10	1	06/24/11 17:44	CF12326
Aroclor 1242	ND (0.222)	10	1	06/24/11 17:44	CF12326
Aroclor 1248	ND (0.222)	10	1	06/24/11 17:44	CF12326
Aroclor 1254	ND (0.222)	10	1	06/24/11 17:44	CF12326
Aroclor 1260	ND (0.222)	10	1	06/24/11 17:44	CF12326
Aroclor 1262	ND (0,222)	10	1	06/24/11 17:44	CF12326
Aroclor 1268	ND (0.222)	10	1	06/24/11 17:44	CF12326

Qualifier

Surrogate: Decachlorobiphenyl	115 %	30-150
Surrogate: Decachlorobiphenyl [2C]	108 %	30-150
Surrogate: Tetrachloro-m-xylene	105 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	111 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-30 Date Sampled: 06/21/11 10:48

Percent Solids: 91 Initial Volume: 5.6 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

				RI - RES DEC			
Analyte	Results (MRL)			<u>Limit</u>	$\overline{\mathbf{DF}}$	Analyzed Sequence	Batch
Aroclor 1016	ND (0.196)			10	1	06/24/11 18:22	CF12326
Aroclor 1221	ND (0.196)			10	1	06/24/11 18:22	CF12326
Aroclor 1232	ND (0.196)			10	1	06/24/11 18:22	CF12326
Aroclor 1242	ND (0.196)			10	1	06/24/11 18:22	CF12326
Aroclor 1248	0.209 (0.196)			10	1	06/24/11 18:22	CF12326
Aroclor 1254	ND (0.196)			10	1	06/24/11 18:22	CF12326
Aroclor 1260	ND (0.196)			10	1	06/24/11 18:22	CF12326
Aroclor 1262	ND (0.196)			10	1	06/24/11 18:22	CF12326
Aroclor 1268	ND (0.196)			10	1	06/24/11 18:22	CF12326
	%Re	covery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl	1	13 %		30-150			
Surrogate: Decachlorobiphenyl [2C]	1	107 %		30-150			
Surrogate: Tetrachloro-m-xylene	1	01 %		30_150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-31 Date Sampled: 06/21/11 10:51

Percent Solids: Initial Volume: 5.7 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-03

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

RΙ	_	R	FS	D	ΓC

		M - MES D	LC.		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.202)	10	i .	06/24/11 18:59	CF12326
Aroclor 1221	ND (0.202)	10	1	06/24/11 18:59	CF12326
Aroclor 1232 Aroclor 1242	ND (0.202)	10 10	1	06/24/11 18:59 06/24/11 18:59	CF12326
Aroclor 1248	ND (0.202) ND (0.202)	10	1	06/24/11 18:59	CF12326 CF12326
Aroclor 1254	ND (0.202) ND (0.202)	10	1	06/24/11 18:59	CF12326 CF12326
Aroclor 1260	ND (0.202) ND (0.202)	10	1	06/24/11 18:59	CF12326
Aroclor 1262	ND (0.202)	10	1	06/24/11 18:59	CF12326
Aroclor 1268	ND (0.202)	10	1	06/24/11 18:59	CF12326
	,				

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	101 %		30-150
Surrogate: Decachlorobiphenyl [2C]	97 %		30-150
Surrogate: Tetrachloro-m-xylene	91 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	94 %		30-150



The Microbiology Division of Thiclsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-32 Date Sampled: 06/21/11 10:55

Percent Solids: 8 Initial Volume: 5.5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

КI	-	RES	DEC	•

Limits

		III III.	- -		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.204)	10	1	06/24/11 19:37	CF12326
Aroclor 1221	ND (0.204)	10	1	06/24/11 19:37	CF12326
Aroclor 1232	ND (0.204)	10	1	06/24/11 19:37	CF12326
Aroclor 1242	ND (0.204)	10	1	06/24/11 19:37	CF12326
Aroclor 1248	ND (0.204)	10	1	06/24/11 19:37	CF12326
Aroclor 1254	0.445 (0.204)	10	1	06/24/11 19:37	CF12326
Aroclor 1260	ND (0.204)	10	1	06/24/11 19:37	CF12326
Aroclor 1262	ND (0.204)	10	1	06/24/11 19:37	CF12326
Aroclor 1268	ND (0.204)	10	1	06/24/11 19:37	CF12326

Qualifier

	,	
Surrogate: Decachlorobiphenyl	99 %	30-150
Surrogate: Decachlorobiphenyl [2C]	97 %	30-150
Surrogate: Tetrachioro-m-xylene	93 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	96 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-33 Date Sampled: 06/21/11 10:59

Percent Solids: 85 Initial Volume: 5.4 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-05

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

DI	D	TC	DEC	•

Analyte Aroclor 1016	Results (MRL) ND (0.218)	<u>Limit</u> 10	<u>DF</u>	Analyzed Sequence 06/24/11 20:15	Batch CF12326
Aroclor 1221	ND (0.218)	10	1	06/24/11 20:15	CF12326
Aroclor 1232	ND (0.218)	10	1	06/24/11 20:15	CF12326
Aroclor 1242	ND (0.218)	10	1	06/24/11 20:15	CF12326
Aroclor 1248	ND (0.218)	10	1	06/24/11 20:15	CF12326
Aroclor 1254	0.370 (0.218)	10	1	06/24/11 20:15	CF12326
Aroclor 1260	ND (0.218)	10	I	06/24/11 20:15	CF12326
Aroclor 1262	ND (0.218)	10	1	06/24/11 20:15	CF12326
Aroclor 1268	ND (0.218)	10	1	06/24/11 20:15	CF12326

Surrogate: Decachlorobiphenyl	88 %	30-150
Surrogate: Decachlorobiphenyl [2C]	89 %	30-150
Surrogate: Tetrachloro-m-xylene	81 %	30-150
Surrogate: Tetrachioro-m-xylene [2C]	88 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-33 Date Sampled: 06/21/11 11:02

Percent Solids: 89 Initial Volume: 5.8 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-06

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

			RI - RES D	EC		
Analyte Aroclor 1016	Results (MRL)		<u>Limit</u>	<u>DF</u>	Analyzed Sequence	
Aroclor 1221	ND (0.194)		10	1	06/24/11 20:53	CF12326
	ND (0.194)		10	1	06/24/11 20:53	CF12326
Aroclor 1232	ND (0.194)		10	1	06/24/11 20:53	CF12326
Aroclor 1242	ND (0.194)		10	1	06/24/11 20:53	CF12326
Aroclor 1248	ND (0.194)		10	1	06/24/11 20:53	CF12326
Aroclor 1254	0.289 (0.194)		10	1	06/24/11 20:53	CF12326
Aroclor 1260	ND (0.194)		10	1	06/24/11 20:53	CF12326
Aroclor 1262	ND (0.194)		10	1	06/24/11 20:53	CF12326
Aroclor 1268	ND (0.194)		10	1	06/24/11 20:53	CF12326
100,000	%Recovery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl	108 %		30-150			
Surrogate: Decachlorobiobenyl [20]						

Surrogate: Decachlorobiphenyl	108 %	30-150
Surrogate: Decachlorobiphenyl [2C]	106 %	30-150
Surrogate: Tetrachloro-m-xylene	113 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	101 %	30_150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-34 Date Sampled: 06/21/11 11:04

Percent Solids: 92 Initial Volume: 5.6 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-07

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

Analyte Aroclor 1016	Results (MRL) ND (0.194)	Limit	<u>DF</u>	<u>Analyzed</u> <u>Sequence</u> 06/24/11 21:30	Batch CF12326
Aroclor 1221	ND (0.194)	10	1	06/24/11 21:30	CF12326
Aroclor 1232	ND (0.194)	10	1	06/24/11 21:30	CF12326
Aroclor 1242	ND (0.194)	10	1	06/24/11 21:30	CF12326
Aroclor 1248	ND (0.194)	10	1	06/24/11 21:30	CF12326
Aroclor 1254	2.06 (0.194)	10	1	06/24/11 21:30	CF12326
Aroclor 1260	ND (0.194)	10	1	06/24/11 21:30	CF12326
Aroclor 1262	ND (0.194)	10	1	06/24/11 21:30	CF12326
Aroclor 1268	ND (0.194)	10	1	06/24/11 21:30	CF12326

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	108 %		30-150
Surrogate: Decachlorobiphenyl [2C]	101 %		30-150
Surrogate: Tetrachloro-m-xylene	<i>85</i> %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	91 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-35 Date Sampled: 06/21/11 11:08

Percent Solids: 88 Initial Volume: 5.7 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-08

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

				RI - RES D	EC		
<u>Analyte</u>	Results (MRL)			<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Areclor 1016	ND (0.199)			10	Ī	06/24/11 22:08	CF12326
Aroclor 1221	ND (0.199)			10	1	06/24/11 22:08	CF12326
Aroclor 1232	ND (0.199)			10	1	06/24/11 22:08	CF12326
Aroclor 1242	ND (0.199)			10	1	06/24/11 22:08	CF12326
Aroclor 1248	2.73 (0.199)			10	1	06/24/11 22:08	CF12326
Aroclor 1254	6.21 (0.997)			10	5	06/27/11 11:55	CF12326
Aroclor 1260	ND (0.199)			10	1	06/24/11 22:08	CF12326
Aroclor 1262	ND (0.199)			10	1	06/24/11 22:08	CF12326
Aroclor 1268	ND (0.199)			10	1	06/24/11 22:08	CF12326
	%	Recovery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl		106 %		30-150			
Surrogate: Decachlorobiphenyl [2C]		105 %		30-150			
Surrogate: Tetrachioro-m-xylene		104 %		30-150			
Surrogate; Tetrachloro-m-xylene [2C]		100 %		30-150			,



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-36 Date Sampled: 06/21/11 11:12

Percent Solids: Initial Volume: 5.8 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-09

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

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**	_	w			\mathbf{EC}

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.203)	10	Ĭ	06/24/11 22:46	CF12326
Aroclor 1221	ND (0.203)	10	1	06/24/11 22:46	CF12326
Aroelor 1232	ND (0.203)	10	1	06/24/11 22:46	CF12326
Aroclor 1242	ND (0.203)	10	1	06/24/11 22:46	CF12326
Aroclor 1248	ND (0.203)	10	1	06/24/11 22:46	CF12326
Aroclor 1254	1.39 (0.203)	10	1	06/24/11 22:46	CF12326
Aroclor 1260	ND (0.203)	10	1	06/24/11 22:46	CF12326
Aroclor 1262	ND (0.203)	10	1	06/24/11 22:46	CF12326
Aroclor 1268	ND (0.203)	10	1	06/24/11 22:46	CF12326

	70Recovery	Qualitei	LHIHUS
Surrogata: Decachiorobiphenyl	119 %		30-150
Surrogate: Decachlorobiphenyl [2C]	103 %		30-150
Surrogate: Tetrachloro-m-xylene	108 %		30-150
Surrogate; Tetrachloro-m-xylene [2C]	107 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Sample ID: SW-37 Date Sampled: 06/21/11 11:16

Percent Solids: Initial Volume: 5.4 Final Volume: 10 Extraction Method: 3540

Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-10 Sample Matrix: Soil Units: mg/kg dry

Analyst: IBM Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

RI	_	RES	DEC

Limits

		Tu tubble			
Analyte Aroclor 1016	Results (MRL) ND (0.208)	<u>Limit</u> 10	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> <u>Sequence</u> 06/24/11 23:23	<u>Batch</u> CF12326
Aroclor 1221	ND (0.208)	10	1	06/24/11 23:23	CF12326
Aroclor 1232	ND (0.208)	10	1	06/24/11 23:23	CF12326
Aroclor 1242	ND (0.208)	10	1	06/24/11 23:23	CF12326
Aroclor 1248	ND (0.208)	10	1	06/24/11 23:23	CF12326
Aroclor 1254	3.88 (0.208)	10	1	06/24/11 23:23	CF12326
Aroclor 1260	ND (0.208)	10	1	06/24/11 23:23	CF12326
Aroclor 1262	ND (0.208)	10	1	06/24/11 23:23	CF12326
Aroclor 1268	ND (0.208)	10	1	06/24/11 23:23	CF12326

Oualifier

Surrogate: Decachlorobiphenyl	120 %	30-150
Surrogate: Decachiorobiphenyi [2C]	108 %	30-150
Surrogate: Tetrachloro-m-xylene	102 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	98 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-38 Date Sampled: 06/21/11 13:30

Percent Solids: 8 Initial Volume: 5.4 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-11

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

RI	_	R	$\mathbf{F}\mathbf{S}$	DI	\mathbf{c}

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.220)	10	1	06/25/11 1:54	CF12326
Aroclor 1221	ND (0.220)	10	1	06/25/11 1:54	CF12326
Aroclor 1232	ND (0.220)	10	I	06/25/11 1:54	CF12326
Aroclor 1242	ND (0.220)	10	1	06/25/11 1:54	CF12326
Aroclor 1248	2.30 (0.220)	10	1	06/25/11 1:54	CF12326
Aroclor 1254	6.69 (1.10)	10	5	06/27/11 12:12	CF12326
Aroclor 1260	ND (0.220)	10	1	06/25/11 1:54	CF12326
Aroclor 1262	ND (0.220)	10	1	06/25/11 1:54	CF12326
Aroclor 1268	ND (0.220)	10	1	06/25/11 1:54	CF12326

	%Recovery	Qualifier	Limits
Surrogate; Decachlorobiphenyl	118 %		30-150
Surrogate; Decachlorobiphenyl [2C]	104 %		30-150
Surrogate: Tetrachloro-m-xylene	89 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	94 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-39 Date Sampled: 06/21/11 13:33

Percent Solids: Initial Volume: 5.4 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-12

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

		RI - RES D	EC		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.244)	10	1	06/25/11 2:32	CF12326
Aroclor 1221	ND (0.244)	10	1	06/25/11 2:32	CF12326
Aroclor 1232	ND (0.244)	10	1	06/25/11 2:32	CF12326
Aroclor 1242	ND (0.244)	10	1	06/25/11 2:32	CF12326
Aroclor 1248	9.19 (2.44)	10	10	06/27/11 12:31	CF12326
Aroclor 1254	15.9 (2.44)	10	10	06/27/11 12:31	CF12326
Aroclor 1260	ND (0.244)	10	1	06/25/11 2:32	CF12326
Aroclor 1262	ND (0.244)	10	1	06/25/11 2:32	CF12326
Aroclor 1268	ND (0.244)	10	1	06/25/11 2:32	CF12326
	%Recovery	Qualifier Limits			

	,	
Surrogate: Decachlorobiphenyl	118 %	<i>30-150</i>
Surrogate: Decachlorobiphenyl [2C]	118 %	30-150
Surrogate: Tetrachloro-m-xylene	<i>82</i> %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	97 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-40 Date Sampled: 06/21/11 13:36

Percent Solids: 79 Initial Volume: 5.6 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-13

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

RΙ	_	RES	DEC

Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.226)	10	1	06/25/11 3:10	CF12326
Aroclor 1221	ND (0.226)	10	1	06/25/11 3:10	CF12326
Aroclor 1232	ND (0.226)	10	1	06/25/11 3:10	CF12326
Aroclor 1242	ND (0.226)	10	1	06/25/11 3:10	CF12326
Aroclor 1248	12.8 (2.26)	10	10	06/27/11 12:49	CF12326
Aroclor 1254	18.1 (2.26)	10	10	06/27/11 12:49	CF12326
Aroclor 1260	ND (0.226)	10	1	06/25/11 3:10	CF12326
Aroclor 1262	ND (0.226)	10	1	06/25/11 3:10	CF12326
Aroclor 1268	ND (0.226)	10	1	06/25/11 3:10	CF12326

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	111 %		30-150
Surrogate: Decachlorobiphenyl [2C]	106 %		30-150
Surrogate: Tetrachloro-m-xylene	89 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	103 %		30-150



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CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Client Sample ID: SW-41 Date Sampled: 06/21/11 13:39

Percent Solids: 76 Initial Volume: 5.6 Final Volume: 10

Extraction Method: 3540

Aroclor 1262

Aroclor 1268

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-14

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES D	EC		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.235)	10	1	06/25/11 3:47	CF12326
Aroclor 1221	ND (0.235)	10	1	06/25/11 3:47	CF12326
Aroclor 1232	ND (0.235)	10	1	06/25/11 3:47	CF12326
Aroclor 1242	ND (0.235)	10	1	06/25/11 3:47	CF12326
Aroclor 1248	21.0 (2.35)	10	10	06/27/11 13:08	CF12326
Aroclor 1254	26.1 (2.35)	10	10	06/27/11 13:08	CF12326
Aroclor 1260	ND (0.235)	10	1	06/25/11 3:47	CF12326

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	90Recovery	Quaimer	Limits
Surrogate: Decachlorobiphenyl	118 %		30-150
Surrogate: Decachlorobiphenyl [2C]	104 %		30-150
Surrogate: Tetrachloro-m-xylene	80 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	99 %		30-150

ND (0.235)

ND (0.235)

06/25/11 3:47

06/25/11 3:47

CF12326

CF12326



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CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-42 Date Sampled: 06/21/11 13:42

Percent Solids: 80 Initial Volume: 5.3 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-15

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

RI -	RES	DEC
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Limits

			AND AND D			
Ana Aroci	<u>lyte</u> or 1016	<u>Results (MRL)</u> ND (0.236)	<u>Limit</u> 10	$\frac{\mathbf{DF}}{1}$	Analyzed Sequence 06/25/11 4:25	Batch CF12326
Arocl	or 1221	ND (0.236)	10	1	06/25/11 4:25	CF12326
Arocl	or 1232	ND (0.236)	10	1	06/25/11 4:25	CF12326
Arocl	or 1242	ND (0.236)	10	1	06/25/11 4:25	CF12326
Aroc	ler 1248	3.68 (0.236)	10	1	06/25/11 4:25	CF12326
Aroc	lor 1254	10.3 (1.18)	10	5	06/27/11 13:27	CF12326
Arocl	or 1260	ND (0.236)	10	1	06/25/11 4:25	CF12326
Arocl	or 1262	ND (0.236)	10	1	06/25/11 4:25	CF12326
Arocl	or 1268	ND (0.236)	10	1	06/25/11 4:25	CF12326

Oualifier

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Surrogate: Decachlorobiphenyl	122 %		30-150
Surrogate: Decachlorobiphenyl [2C]	113 %		30-150
Surrogate: Tetrachloro-m-xylene	81 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	98 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

80

Client Project ID: SK Cranston Client Sample ID: VB-34 Date Sampled: 06/21/11 13:45

Percent Solids: Initial Volume: 6 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-16

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DI	E C		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.208)	10	1	06/25/11 5:03	CF12326
Aroclor 1221	ND (0.208)	10	1	06/25/11 5:03	CF12326
Aroclor 1232	ND (0.208)	10	1	06/25/11 5:03	CF12326
Aroclor 1242	ND (0.208)	10	1	06/25/11 5:03	CF12326
Aroclor 1248	0.782 (0.208)	10	1	06/25/11 5:03	CF12326
Aroclor 1254	1.34 (0.208)	10	1	06/25/11 5:03	CF12326
Aroclor 1260	ND (0.208)	10	1	06/25/11 5:03	CF12326
Aroclor 1262	ND (0.208)	10	1	06/25/11 5:03	CF12326
Aroclor 1268	ND (0.208)	10	1	06/25/11 5:03	CF12326

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	104 %		30-150
Surrogate: Decachlorobiphenyl [2C]	114 %		30-150
Surrogate: Tetrachloro-m-xylene	103 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	105 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-35 Date Sampled: 06/21/11 13:48

Percent Solids:

78 5.6

Initial Volume: 5.6 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-17

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

RI -	RES	DEC
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Limits

		14 1440			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclar 1016	ND (0.229)	10	I	06/25/11 5:40	CF12326
Aroclor 1221	ND (0.229)	10	1	06/25/11 5:40	CF12326
Arcelor 1232	ND (0.229)	10	i	06/25/11 5:40	CF12326
Aroclor 1242	ND (0.229)	10	1	06/25/11 5:40	CF12326
Aroclor 1248	2.05 (0.229)	10	1	06/25/11 5:40	CF12326
Arecler 1254	3.20 (0.229)	10	1	06/25/11 5:40	CF12326
Aroclor 1260	ND (0.229)	10	1	06/25/11 5:40	CF12326
Aroclor 1262	ND (0.229)	10	1	06/25/11 5:40	CF12326
Aroclor 1268	ND (0.229)	10	1	06/25/11 5:40	CF12326

Oualifier

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Surrogate: Decachlorobiphenyl	108 %		30-150
Surrogate: Decachlorobiphenyl [2C]	108 %		30-150
Surrogate: Tetrachloro-m-xylene	115 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	103 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-36 Date Sampled: 06/21/11 13:53

Percent Solids: Initial Volume: 5.7 Final Volume: 10 Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-18

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

				RI - RES DI	EC		
Analyte	Results (MRL)		<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.189)			10	I	06/25/11 6:18	CF12326
Aroclor 1221	ND (0.189)			10	1	06/25/11 6:18	CF12326
Aroclor 1232	ND (0.189)			10	1	06/25/11 6:18	CF12326
Aroclor 1242	ND (0.189)			10	1	06/25/11 6:18	CF12326
Aroclor 1248	0.262 (0.189)			10	1	06/25/11 6:18	CF12326
Aroclor 1254	0.337 (0.189)			10	1	06/25/11 6:18	CF12326
Aroclor 1260	ND (0.189)			10	1	06/25/11 6:18	CF12326
Aroclor 1262	ND (0.189)			10	1	06/25/11 6:18	CF12326
Aroclor 1268	ND (0.189)			10	1	06/25/11 6:18	CF12326
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	%Recovery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl		114 %		30-150		*	
Surrogate: Decachlorobiphenyl [2C]		109 %		30-150			
Surrogate: Tetrachloro-m-xylene		109 %		30-150			
Surrogate: Tetrachloro-m-xylene [2C]		114 %		30-150			



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CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-37 Date Sampled: 06/21/11 13:56

Percent Solids: Similar Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-19

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/23/11 17:30

8082 Polychlorinated Biphenyls (PCB)

RI - I	ŒS	DE	C
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Limits

Analyte Aroclor 1016	Results (MRL) ND (0.219)	Limit	$\underline{\mathbf{DF}}_{\mathbf{I}}$	<u>Analyzed</u> <u>Sequence</u> 06/25/11 6:56	Batch CF12326
Aroclor 1221	ND (0.219) ND (0.219)	10	1	06/25/11 6:56	CF12326
Aroclor 1232	ND (0.219) ND (0.219)	10	1	06/25/11 6:56	CF12326
Aroclor 1242	ND (0.219)	10	1	06/25/11 6:56	CF12326
Aroclor 1248	2.12 (0.219)	10	ı	06/25/11 6:56	CF12326
Aroclor 1254	3.41 (0.219)	10	Ĺ	06/25/11 6:56	CF12326
Aroclor 1260	ND (0.219)	10	1	06/25/11 6:56	CF12326
Aroclor 1262	ND (0.219)	10	1	06/25/11 6:56	CF12326
Aroclor 1268	ND (0.219)	10	1	06/25/11 6:56	CF12326

Qualifier

	70/1227/21/	- Carana	2.77.70
Surrogate: Decachlorobiphenyl	110 %		30-150
Surrogate: Decachlorobiphenyl [2C]	115 %		30-150
Surrogate: Tetrachloro-m-xylene	127 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	109 %		30-150



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CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-2B Date Sampled: 06/21/11 13:59

Percent Solids:

93

Initial Volume: 5.5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-20

Sample Matrix: Soil Units: mg/kg dry

Analyst: IBM

Prepared: 6/23/11 17:30

RI - RES DEC	
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			M - RES D	EC			
<u>Analyte</u>	Results (MRL)		<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	Sequence	Batch
Aroclor 1016	ND (0.196)		10	1	06/25/11 7:34		CF12326
Aroclor 1221	ND (0.196)		10	1	06/25/11 7:34		CF12326
Aroclor 1232	ND (0.196)		10	1	06/25/11 7:34		CF12326
Aroclor 1242	ND (0.196)		10	1	06/25/11 7:34		CF12326
Aroclor 1248	ND (0.196)		10	1	06/25/11 7:34		CF12326
Aroclor 1254	ND (0.196)		10	1	06/25/11 7 :34		CF12326
Aroclor 1260	ND (0.196)		10	1	06/25/11 7:34		CF12326
Aroclor 1262	ND (0.196)		10	1	06/25/11 7:34		CF12326
Aroelor 1268	ND (0.196)		10	1	06/25/11 7:34		CF12326
	%Recovery	Qualifier	Limits				
Surrogate: Decachlorobiphenyl	116 %		30-150				
Surrogate: Decachlorobiphenyl [2C]	109 %		30-150				
Surrogate: Tetrachioro-m-xylene	. 107 %		30-150				
Surrogate: Tetrachloro-m-xylene [2C]	112 %		30-150				



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: Dup-VB-2B

Date Sampled: 06/21/11 13:59 Percent Solids:

Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-21

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

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Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.211)	10	1	06/27/11 19:06	CF12424
Aroclor 1221	ND (0.211)	10	1	06/27/11 19:06	CF12424
Aroclor 1232	ND (0.211)	10	1	06/27/11 19:06	CF12424
Aroclor 1242	ND (0.211)	10	1	06/27/11 19:06	CF12424
Aroclor 1248	ND (0.211)	10	1	06/27/11 19:06	CF12424
Aroclor 1254	ND (0.211)	10	1	06/27/11 19:06	CF12424
Aroclor 1260	ND (0.211)	10	1	06/27/11 19:06	CF12424
Aroclor 1262	ND (0.211)	10	1	06/27/11 19:06	CF12424
Aroclor 1268	ND (0.211)	10	1	06/27/11 19:06	CF12424

Oualitier

	Juliani	Quality Ci	ziii ii
Surrogate: Decachlorobiphenyl	97 %		30-150
Surrogate: Decachlorobiphenyl [2C]	93 %		30-150
Surrogate: Tetrachloro-m-xylene	90 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	95 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-43 Date Sampled: 06/21/11 15:00

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-22

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

	RI - RES DEC					
Analyte Aroelor 1016	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch	
Alocidi 1010	ND (0.213)	10	1	06/27/11 19:44	CF12424	
Aroclor 1221	ND (0.213)	10	1	06/27/11 19:44	CF12424	
Aroclor 1232	ND (0.213)	10	1	06/27/11 19:44	CF12424	
Aroclor 1242	ND (0.213)	10	1	06/27/11 19:44	CF12424	
Aroclor 1248	ND (0.213)	10	1	06/27/11 19:44	CF12424	
Aroclor 1254	ND (0.213)	10	1	06/27/11 19:44	CF12424	
Aroclor 1260	ND (0.213)	10	1	06/27/11 19:44	CF12424	
Aroclor 1262	ND (0.213)	10	1	06/27/11 19:44	CF12424	
Aroclor 1268	ND (0.213)	10	1	06/27/11 19:44	CF12424	

Qualifier

Limits

Surrogate: Decachlorobiphenyl	76 %	30-150
Surrogate: Decachlorobiphenyl [2C]	79 %	30-150
Surrogate: Tetrachloro-m-xylene	77 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	80 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-44 Date Sampled: 06/21/11 15:03

Percent Solids: 91 Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-23

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

***	-		-	-
KI.	- K	F S	\mathbf{DE}	•

Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.215)	10	i	06/27/11 20:21	CF12424
Aroclor 1221	ND (0.215)	10	1	06/27/11 20:21	CF12424
Aroeler 1232	ND (0.215)	10	1	06/27/11 20:21	CF12424
Aroclor 1242	ND (0.215)	10	1	06/27/11 20:21	CF12424
Aroclor 1248	2.27 (0.215)	10	1	06/27/11 20:21	CF12424
Aroclor 1254	7.75 (1.08)	10	5	06/28/11 9:13	CF12424
Aroclor 1260	ND (0.215)	10	1	06/27/11 20:21	CF12424
Aroclor 1262	ND (0.215)	10	1	06/27/11 20:21	CF12424
Aroclor 1268	ND (0.215)	10	1	06/27/11 20:21	CF12424

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	96 %		30-150
Surrogate: Decachlorobiphenyl [2C]	82 %		30-150
Surrogate: Tetrachloro-m-xylene	75 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	73 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-45 Date Sampled: 06/21/11 15:06

Percent Solids: 90 Initial Volume: 5.7 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-24

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC						
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed :	Sequence	Batch
Aroclor 1016	ND (19.5)	10	100	06/28/11 9:51		CF12424
Arocior 1221	ND (19.5)	10	100	06/28/11 9:51		CF12424
Aroclor 1232	ND (19.5)	10	100	06/28/11 9:51		CF12424
Aroclor 1242	ND (19.5)	10	100	06/28/11 9:51		CF12424
Aroclor 1248	110 (19.5)	10	100	06/28/11 9:51		CF12424
Aroclor 1254	ND (19.5)	10	100	06/28/11 9:51		CF12424
Aroclor 1260	ND (19.5)	10	100	06/28/11 9:51		CF12424
Aroclor 1262	ND (19.5)	10	100	06/28/11 9:51		CF12424
Aroclor 1268	ND (19.5)	10	100	06/28/11 9:51		CF12424

Qualifier

Limits

Surrogate: Decachlorobiphenyl	%	SD.	30-150
Surrogate: Decachiorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	
	70		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-46 Date Sampled: 06/21/11 15:09

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-25

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.225)	10	1	06/27/11 21:37	CF12424
Aroclor 1221	ND (0.225)	10	1	06/27/11 21:37	CF12424
Aroclor 1232	ND (0.225)	10	1	06/27/11 21:37	CF12424
Aroclor 1242	ND (0.225)	10	1	06/27/11 21:37	CF12424
Aroclor 1248	9.63 (2.25)	10	10	06/28/11 10:29	CF12424
Aroclor 1254	18.3 (2.25)	10	10	06/28/11 10:29	CF12424
Aroclor 1260	ND (0.225)	10	1	06/27/11 21:37	CF12424
Aroclor 1262	ND (0.225)	10	1	06/27/11 21:37	CF12424
Aroclor 1268	ND (0.225)	10	1	06/27/11 21:37	CF12424

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	88 %		30-150
Surrogate: Decachlorobiphenyl [2C]	92 %		30-150
Surrogate: Tetrachioro-m-xylene	88 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	80 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-47

Date Sampled: 06/21/11 15:12 Percent Solids: 92

Final Volume: 10 Extraction Method: 3540

Initial Volume: 5.3

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-26

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

		RI - RES D	EC		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.205)	10	1	06/27/11 22:14	CF12424
Aroclor 1221	ND (0.205)	10	1	06/27/11 22:14	CF12424
Aroclor 1232	ND (0.205)	10	1	06/27/11 22:14	CF12424
Aroctor 1242	ND (0.205)	10	1	06/27/11 22:14	CF12424
Aroclor 1248	ND (0.205)	10	1	06/27/11 22:14	CF12424
Aroclor 1254	2.76 (0.205)	10	1	06/27/11 22:14	CF12424
Aroclor 1260	ND (0.205)	10	1	06/27/11 22:14	CF12424
Aroclor 1262	ND (0.205)	10	1	06/27/11 22:14	CF12424
Aroclor 1268	ND (0.205)	10	1	06/27/11 22:14	CF12424
	N/ Deserver	0			

	Anticovery	Quenter	Linas
Surrogate: Decachlorobiphenyl	83 %		30-150
Surrogate: Decachlorobiphenyl [2C]	<i>77</i> %		30-150
Surrogate: Tetrachioro-m-xylene	66 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	64 %		<i>30-150</i>



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-48 Date Sampled: 06/21/11 15:15

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-27

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

TOT		DEC	TA:	
RI	_	RES	1 3	r.C.

Limits

<u>Analyte</u>	Results (MRL)	Limit	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.222)	10	1	06/27/11 22:52	CF12424
Aroclor 1221	ND (0.222)	10	1	06/27/11 22:52	CF12424
Aroclor 1232	ND (0.222)	10	1	06/27/11 22:52	CF12424
Aroclor 1242	ND (0.222)	10	1	06/27/11 22:52	CF12424
Aroclor 1248	ND (0.222)	10	1	06/27/11 22:52	CF12424
Aroclor 1254	2.94 (0.222)	10	1	06/27/11 22:52	CF12424
Aroclor 1260	ND (0.222)	10	1	06/27/11 22:52	CF12424
Aroclor 1262	ND (0.222)	10	1	06/27/11 22:52	CF12424
Aroclor 1268	ND (0.222)	10	1	06/27/11 22:52	CF12424

Oualifier

	•	•	
Surrogate: Decachlorobiphenyl	107 %		30-150
Surrogate: Decachlorobiphenyl [2C]	97 %		30-150
Surrogate: Tetrachloro-m-xylene	74 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	<i>69</i> %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-49 Date Sampled: 06/21/11 15:18

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-28

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DI	EC			
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed	Sequence B	Batch
Aroclor 1016	ND (0.225)	10	1	06/28/11 1:23	C	F12424
Aroclor 1221	ND (0.225)	10	1	06/28/11 1:23	C	F12424
Aroclor 1232	ND (0.225)	10	1	06/28/11 1:23	C	F12424
Aroclor 1242	ND (0.225)	10	1	06/28/11 1:23	C	F12424
Areclor 1248	ND (0.225)	10	I	06/28/11 1:23	CI	F12424
Aroclor 1254	2.23 (0.225)	10	1.	06/28/11 1:23	CI	F12424
Aroclor 1260	ND (0.225)	10	i	06/28/11 1:23	CI	F12424
Aroclor 1262	ND (0.225)	10	1	06/28/11 1:23	CI	F12424
Aroclor 1268	ND (0.225)	10	1	06/28/11 1:23	C	F12424

	%Recovery	Oualifier	Limits
	,		2.77.76
Surrogate: Decachlorobiphenyl	58 %		30-150
Surrogate: Decachlorobiphenyl [2C]	54 %		30-150
Surrogate: Tetrachioro-m-xylene	41 %		30-150
Surrogate: Tetrachloro-m-xvlene [2C]			30-130
Junogate. Tedacidolo-un sylene [26]	42 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: Dup-SW-49 Date Sampled: 06/21/11 15:18

Percent Solids:

Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-29

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 6/24/11 18:00

RI	- RES	

		14 1420			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (2.18)	10	10	06/29/11 12:14	CF12424
Aroclor 1221	ND (2.18)	10	10	06/29/11 12:14	CF12424
Aroclor 1232	ND (2.18)	10	10	06/29/11 12:14	CF12424
Aroclor 1242	ND (2.18)	10	10	06/29/11 12:14	CF12424
Aroclor 1248	ND (2.18)	10	10	06/29/11 12:14	CF12424
Aroclor 1254	ND (2.18)	10	10	06/29/11 12:14	CF12424
Aroclor 1260	ND (2.18)	10	10	06/29/11 12:14	CF12424
Aroclor 1262	ND (2.18)	10	10	06/29/11 12:14	CF12424
Aroclor 1268	ND (2.18)	10	10	06/29/11 12:14	CF12424

	TORELOVELY	Quanner	LHIHIS
Surrogate: Decachlorobiphenyl	96	<i>5</i> -	30-150
Surrogate: Decachlorobiphenyl [2C]	%	5-	30-150
Surrogate: Tetrachloro-m-xylene	89 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	90 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-50 Date Sampled: 06/21/11 15:21

Percent Solids: Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-30

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES D	EC		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.220)	10	1	06/28/11 3:53	CF12424
Aroclor 1221	ND (0.220)	10	1	06/28/11 3:53	CF12424
Aroclor 1232	ND (0.220)	10	1	06/28/11 3:53	CF12424
Aroclor 1242	ND (0.220)	10	1	06/28/11 3:53	CF12424
Aroclor 1248	1.78 (0.220)	10	1	06/28/11 3:53	CF12424
Aroclor 1254	3.24 (0.220)	10	1	06/28/11 3:53	CF12424
Aroclor 1260	ND (0.220)	10	1	06/28/11 3:53	CF12424
Aroclor 1262	ND (0.220)	10	1	06/28/11 3:53	CF12424
Aroclor 1268	ND (0.220)	10	1	06/28/11 3:53	CF12424

Qualifier

Limits

Surrogate: Decachlorobiphenyl	99 %	30-150
Surrogate: Decachlorobiphenyl [2C]	92 %	30-150
Surrogate: Tetrachloro-m-xylene	<i>73 %</i>	30-150
Surrogate: Tetrachloro-m-xylene [2C]	<i>72 %</i>	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-38 Date Sampled: 06/21/11 15:24

Percent Solids: Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-31

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

\mathbf{n}	_	\mathbf{R}	ΤS	DEC	

<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.211)	10	I	06/28/11 4:31	CF12424
Aroclor 1221	ND (0.211)	10	1	06/28/11 4:31	CF12424
Aroclor 1232	ND (0.211)	10	1	06/28/11 4:31	CF12424
Aroclor 1242	ND (0.211)	10	1	06/28/11 4:31	CF12424
Aroclor 1248	ND (0.211)	10	1	06/28/11 4:31	CF12424
Aroclor 1254	0.637 (0.211)	10	1	06/28/11 4:31	CF12424
Aroclor 1260	ND (0.211)	10	1	06/28/11 4:31	CF12424
Aroclor 1262	ND (0.211)	10	1	06/28/11 4:31	CF12424
Aroclor 1268	ND (0.211)	10	1	06/28/11 4:31	CF12424

Qualifier

Surrogate: Decachlorobiphenyl	<i>87</i> %	30-150
Surrogate: Decachlorobiphenyl [2C]	89 %	30-150
Surrogate: Tetrachloro-m-xylene	83 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	85 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-39 Date Sampled: 06/21/11 15:27

Percent Solids: 96 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-32

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

		RI - RES DE	C			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.204)	10	1	06/28/11 5:09		CF12424
Aroclor 1221	ND (0.204)	10	1	06/28/11 5:09		CF12424
Aroclor 1232	ND (0.204)	10	1	06/28/11 5:09		CF12424
Aroclor 1242	ND (0.204)	10	1	06/28/11 5:09		CF12424
Aroclor 1248	ND (0.204)	10	1	06/28/11 5:09		CF12424
Aroclor 1254	0.280 (0.204)	10	1	06/28/11 5:09		CF12424
Aroclor 1260	ND (0.204)	10	1	06/28/11 5:09		CF12424
Aroclor 1262	ND (0.204)	10	1	06/28/11 5:09		CF12424
Arcelor 1268	ND (0.204)	10	1	06/28/11 5:09		CF12424

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	74 %		30-150
Surrogate: Decachlorobiphenyl [2C]	77 %		30-150
Surrogate: Tetrachloro-m-xylene	69 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	72 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-40 Date Sampled: 06/21/11 15:30

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-33

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

RI	_	RES	DEC

Analyte Aroclor 1016	Results (MRL) ND (0.215)	Limit 10	<u>DF</u>	Analyzed Sequence 06/28/11 5:46	Batch CF12424
Aroclor 1221	ND (0.215)	10	1	06/28/11 5:46	CF12424
Aroclor 1232	ND (0.215)	10	1	06/28/11 5:46	CF12424
Aroclor 1242	ND (0.215)	10	1	06/28/11 5:46	CF12424
Aroelor 1248	ND (0.215)	10	1	06/28/11 5:46	CF12424
Aroclor 1254	ND (0.215)	10	1	06/28/11 5:46	CF12424
Aroclor 1260	ND (0.215)	10	1	06/28/11 5:46	CF12424
Aroclor 1262	ND (0.215)	10	1	06/28/11 5:46	CF12424
Aroclor 1268	ND (0.215)	10	1	06/28/11 5:46	CF12424

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	<i>88</i> %		30-150
Surrogate: Decachlorobiphenyl [2C]	91 %		30-150
Surrogate: Tetrachloro-m-xylene	86 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	90 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-41

Date Sampled: 06/21/11 15:33

Percent Solids: 91 Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-34

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	C		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.211)	10	1	06/28/11 6:24	CF12424
Aroclor 1221	ND (0.211)	10	1	06/28/11 6:24	CF12424
Aroelor 1232	ND (0.211)	10	Ĭ	06/28/11 6:24	CF12424
Aroclor 1242	ND (0.211)	10	1	06/28/11 6:24	CF12424
Aroclor 1248	P 3.35 (0.211)	10	1	06/28/11 6:24	CF12424
Aroclor 1254	6.64 (1.06)	10	5	06/28/11 11:06	CF12424
Aroclor 1260	ND (0.211)	10	1	06/28/11 6:24	CF12424
Aroclor 1262	ND (0.211)	10	1	06/28/11 6:24	CF12424
Aroclor 1268	ND (0.211)	10	1	06/28/11 6:24	CF12424

Qualifier

Limits

Surrogate: Decachlorobiphenyl	107 %	30-150
Surrogate: Decachlorobiphenyl [2C]	83 %	30-150
Surrogate: Tetrachloro-m-xylene	<i>78 %</i>	30-150
Surrogate: Tetrachloro-m-xylene [2C]	77 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-41 Date Sampled: 06/21/11 15:33

Percent Solids: 91 Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106263 ESS Laboratory Sample ID: 1106263-34RE1

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

TOT.		**	TO C	*	Tra.	-
RΙ	-	ĸ	L.S	IJ	Ľ	U

		1G 1G5-15.	_~		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016 Aroclor 1221	ND (1.06)	10 10	5 5	06/28/11 11:06 06/28/11 11:06	CF12424 CF12424
Aroclor 1221 Aroclor 1232	ND (1.06) ND (1.06)	10	5	06/28/11 11:06	CF12424 CF12424
Aroclor 1242	ND (1.06)	10	5	06/28/11 11:06	CF12424 CF12424
Aroclor 1248	3.53 (1.06)	10	5	06/28/11 11:06	CF12424
Aroclor 1254	6.64 (1.06)	10	5	06/28/11 11:06	CF12424
Aroclor 1260	ND (1.06)	10	5	06/28/11 11:06	CF12424
Aroclor 1262	ND (1.06)	10	5	06/28/11 11:06	CF12424
Aroclor 1268	ND (1.06)	10	5	06/28/11 11:06	CF12424

	%Recovery	Qualifier	Limits
Surrogate; Decachlorobiphenyl	110 %		30-150
Surrogate: Decachlorobiphenyl [ZC]	95 %		30-150
Surrogate: Tetrachloro-m-xylene	81 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	73 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106263

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifie
		8082 Polyo	chlorinated E	iphenyls	(PCB)				*****	
Batch CF12326 - 3540				1 207.67	PLUE 4 III					
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
	0.0304									
Surrogate: Decachlorobiphenyl	0.0284		mg/kg wet	0.02500		114	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0267		mg/kg wet	0.02500		107	30-150			
Surrogate: Tetrachloro-m-xylene	0.0248		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0263		mg/kg wet	0.02500	***************************************	105	30-150			
LCS	***************************************		····							
Aroclor 1016	0.482	0.0500	mg/kg wet	0.5000		96	40-140			
Aroclor 1260	0.492	0.0500	mg/kg wet	0,5000		98	40-140			
Surrogate: Decachlorobiphenyl	0.0298		mg/kg wet	0.02500		119	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0276		mg/kg wet	0.02500		111	30-150			
Surrogate: Tetrachloro-m-xylene	0.0262		mg/kg wet	0.02500		105	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0261		mg/kg wet	0.02500		105	30-150			
.CS Dup										
Aroclor 1016	0.488	0.0500	mg/kg wet	0.5000		98	40-140	1	50	
Aroclor 1260	0.495	0.0500	mg/kg wet	0.5000		99	40-140	0.5	50	
Surrogate: Decachlorobiphenyl	0.0292		mg/kg wet	0.02500		117	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0272		mg/kg wet	0.02500		109	30-150			
Surrogate: Decachioro-m-xylene	0.0263		mg/kg wet	0.02500		105	30-150 30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0264		mg/kg wet	0.02500		106	30-150 30-150			
Matrix Spike Source: 1106263-28		THIAMA	Highlig Net	0.02300	***************************************	100	30-230			•
roclor 1016	1.90	0,185	mg/kg dry	1.854	ND	102	40-140			
proclor 1260	1.86	0.185	mg/kg dry	1.854	ND	101	40-140			
Surrogate: Decachlorobiphenyl	0.112		mg/kg dry	0.09270		121	30-150			
Gurrogate: Decachiorobiphenyi [2C]	0.108		mg/kg dry	0.09270		116	30-150			
Gurrogate: Tetrachloro-m-xylene	0.109		mg/kg dry	0.09270		118	30-150			
urrogate: Tetrachloro-m-xylene [2C]	0.109		mg/kg dry	0.09270		117	30-150			
Matrix Spike Dup Source: 1106263-20										· · · · · · · · · · · · · · · · · · ·
rocior 1016	1.91	0.196	mg/kg dry	1,955	ND	98	40-140	0,6	50	***************************************
eroclor 1260	1.94	0.196	mg/kg dry	1.955	ND	99	40-140	4	50	
iurrogate: Decachlorobiphenyl	0.117		mg/kg dry	0.09775		119	30-150			
iurrogate: Decachiorobiphenyl [2C]	0.109		mg/kg dry	0.09775		112	30-150			
anagata pececinoremphenyi [26]	0.111			0.027/2		412	50-150		-	

Surrogate: Tetrachloro-m-xylene

0.111

30-150

0.09775



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106263

Quality Control Data

Analyte	Result	MRL .	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
		8082 Polyc	hlorinated B	iphenyls ((PCB)					
Batch CF12326 - 3540									***************************************	
Surrogate: Tetrachloro-m-xylene [2C]	0.110		mg/kg dry	0.09775		113	30-150			
Batch CF12424 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Arodor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Arodor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0241		mg/kg wet	0.02500		97	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0230		mg/kg wet	0.02500		92	30-150			
Surrogate: Tetrachloro-m-xylene	0.0221		mg/kg wet	0.02500		89	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0233		mg/kg wet	0.02500		93	30-150			
LCS										
Aroclor 1016	0,462	0.0500	mg/kg wet	0.5000		92	40-140			
Arodor 1260	0.461	0,0500	mg/kg wet	0.5000		92	40-140			
Surrogate: Decachlorobiphenyl	0.0247		mg/kg wet	0.02500		99	30-150			
Surrogate: Decachiorobiphenyl [2C]	0.0236		mg/kg wet	0.02500		95	30-150			
Surrogate: Tetrachioro-m-xylene	0.0228		mg/kg wet	0.02500		91	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0226		mg/kg wet	0.02500		91	30-150			
LCS Dup										
Aroclor 1016	0.470	0,0500	mg/kg wet	0.5000		94	40-140	2	50	
Arodor 1260	0.474	0.0500	mg/kg wet	0.5000		95	40-140	3	50	
Surrogate: Decachlorobiphenyl	0.0251		mg/kg wet	0.02500		100	30-150			
Surragate: Decachlorobiphenyl [2C]	0.0239		mg/kg wet	0.02500		96	30-150			
Surrogate: Tetrachloro-m-xylene	0.0222		mg/kg wet	0.02500		89	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0220		mg/kg wet	0.02500		88	30-150			
Matrix Spike Source: 1106263-28										
Arocior 1016	2.04	0.220	mg/kg dry	2.203	ND	92	40-140			
Aroclor 1260	2.74	0.220	mg/kg dry	2.203	ND	124	40-140			
Surrogate: Decachlorobiphenyl	0.102		mg/kg dry	0.1102		93	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0995		mg/kg dry	0.1102		90	30-150			
Surrogate: Tetrachloro-m-xylene	0.0799		mg/kg dry	0.1102		<i>73</i>	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0718		mg/kg dry	0.1102		65	30-150	•		
Matrix Spike Dup Source: 1106263-28										
Aroclor 1016	2.28	0.225	mg/kg dry	2.247	ND	102	40-140	11	50	
Aroclor 1260	2.58	0.225	mg/kg dry	2.247	ND	115	40-140	6	50	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106263

Quality Control Data

Analyte	Result	MRL Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
		8082 Polychlorinated B	iphenyls	(PCB)					
Batch CF12424 - 3540									
Surragate: Decachlorobiphenyl	0.126	mg/kg dry	0.1124		113	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.108	mg/kg dry	0.1124		96	30-150			
Surrogate: Tetrachloro-m-xylene	0.0796	mg/kg dry	0.1124		71	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0728	mg/kg dry	0.1124		65	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

[CALC] Calculated Analyte

Client Project ID: SK Cranston ESS Laboratory Work Order: 1106263

Notes and Definitions

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
S-	Surrogate recovery(ies) below lower control limit (S-).
P	Percent difference between primary and confirmation results exceeds 40% (P).
EL	Elevated Method Reporting Limits due to sample matrix (EL).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
ï	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106263

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2ia.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/out state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.inde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 <u>http://www.nj.gov/dep/oqa/certlabs.htm</u>

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Woodard & Curran
Client Project ID:
Shipped/Delivered Via: Client

ESS Project ID: 11060263
Date Project Due: 6/28/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?3. Were Custody Seals Intact?	No	12. Any air bubbles in the VOA vials?	N/A
4. Is Radiation count < 100 CPM?	N/A Yes	13. Holding times exceeded?14. Sufficient sample volumes?	No Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: 4.6		16. Are ESS labels on correct containers?(Yes No
Iced With: Ice		17. Were samples received intact?	YeslNo
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	_
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	
18. Was there need to call project manag	ger to discu	ss status? If yes, please explain.	
Who was called?:		By whom?	

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	4 oz Soil Jar	1	NP
2	Yes	4 oz Soil Jar	1	NP
3	Yes	4 oz Soil Jar	1	NP
4	Yes	4 oz Soil Jar	1	NP
5	Yes	4 oz Soil Jar	1	NP
6	Yes	4 oz Soil Jar	1	NP
7	Yes	4 oz Soil Jar	i	NP
8	Yes	4 oz Soil Jar	i	NP
9	Yes	4 oz Soil Jar	i	NP
10	Yes	4 oz Soil Jar	i	NP
11	Yes	4 oz Soil Jar	i	NP
12	Yes	4 oz Soil Jar	i	NP
13	Yes	4 oz Soil Jar	i	NP
14	Yes	4 oz Soil Jar	i	NP
15	Yes	4 oz Soil Jar	<u>i</u>	NP
<u> 16</u>	Yes	4 oz Soil Jar	i	NP
17	Yes	4 oz Soil Jar	1	NP
18	Yes	4 oz Soil Jar	i	NP
19	Yes	4 oz Soil Jar	1	NP
20	Yes	4 oz Soil Jar	3	NP
21	Yes	4 oz Soil Jar	ĭ	NP NP
22	Yes	4 oz Soil Jar	i	NP
23	Yes	4 oz Soil Jar	1	NP
24	Yes	4 oz Soil Jar	i	NP
25	Yes	4 oz Soil Jar	;	NP

Sample and Cooler Receipt Checklist

Client: Woodard & Curran 26 27 28 29 30	Yes Yes Yes Yes Yes	ESS Project ID: 4 oz Soil Jar 4 oz Soil Jar 4 oz Soil Jar 4 oz Soil Jar 4 oz Soil Jar	: <u>11060263</u> 1 1 3 1	NP NP NP NP
31 32 33 34 \$\infty V\$	Yes Yes Yes Yes	4 oz Soil Jar 4 oz Soil Jar 4 oz Soil Jar 4 oz Soil Jar	1 1 1 1	NP NP NP NP
Completed By:		Date/Time: 6/2/1	1)	

I IL DIONIL

ESS LAB PROJECT ID

Reporting Limits

CHAIN OF CUSTODY

Turn Time Other Standard Other Hester than 5 days, prior approval by laboratory is required # State where samples were collected from: ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

,	1777	where samples were collected from:	i					})))		1
Tel. (401) 461-7181 Fax (401) 461-4486		(RI) CT NH NJ NY ME	Other		Electronic	Electronic Deliverable	e.	Yes	2	1	
×		Is this project for any of the following: MA-MCP Navo USACE	Ocher		Format:	Format: Excel Access	ccess	PDF_C	Other		
C. Nome	Project #	Project Name (20 Char. or less)			Circ	e and/orW	rite Regi	Circle and/orWrite Required Analysis	sis		
1 Johnston & Copen	219.303	SAFETY-KIEEL				- 5	EX.	(हा			
Contact Person	Address 95	Cens Co.	15	YPH PITA Witergets	HdB	608 2 PCE 2071 2070) SINTS 8H			
222	- 1	1		n S	T F	808 neide	ABC	H/™ TW-c	_		
Providence AT	02963			8015 8015 680	'HVH' EbH	979 97 97		IOW		-:	
Telephone #		Email Address) X2	n str		RCR.	(81	_		
461 273 1007	1000 007		190	17 71 70 180 180	EЫ	707 726 8°2	-) S:		_	
ESS IAB Date Collection A Time Sample #	Sampl Sampl	nple Identification (20 Char. or less)	Pres Code Mumb Type	28 78	ojas T	808 Pesucid S	FCEP.	WELVI WC			
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10 [6 21] 1116	1 X S X	1	1 6			×	_				
y G-Glass S-Sterile	V-VOA Matrix: S-Soil SD	olid D-Sludge WW-Waste Water	GW-Ground Water	r SW-Surface Water	ze Water	DW-Drinking Water	cing Wate		O-Oil W-Wipes	F-Filters	ters
Cooler Present	Internal Use Only	Preservation Code 1- NR, 2- HC1, 3- H2SO4, 4- HNO3, 5- NaOH, 6- McOH, 7- Asorbic Acid, 8- ZnAct, 9-	H2SO4, 4- HNC), 5- NaOH	6- MeO	1, 7- Asorb	ic Acid, 8	3- ZnAct, §			
Seals Intact Yes No NA: X	[] Pickup	Sampled by: SEAN DRISLOL	71018								\Box
Cooler Temp: 4.6 1'CL	[] Technicians	Comments: POBZ WITH C	3	0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5% 0.5%							
									ľ		ſ

*By circling MA-MCR, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

10/26/04 B

1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Jare/Time Date/Time

Regeired by: (Signiture)

421/1º 11600 Date/Time

Date/Time

(Signature)

Received by: (Signature)

Date/Time

Received by: (Signature)

Date/Time

ESS Laboratory Division of Thielsch Engineering, Inc.	ring, Inc.	Turn Time	CHAIN OF CUSTODY	JST	ODY Reporting Limits	Page 2 of the ESS LAB PROJECT ID
185 Frances Avenue, Cransto Tel. (401) 461-7181 Fax (40 www.esslaboratory.com	Jranston, KI 02910-22 Fax (401) 461-4486 a	State when MA (RI Is this pro	ted from: NY ME Other owing: USACE Other		Electronic Deliverable Format: Excel Access_	Yes X No
- 1		ď			Circle and/orWrite Required Analysis	equired Analysis
Contact Person	72	219303 JANETY NAddress 95 / 2000 St	大(6 05)	səssə Hdl TV	HO 9H 9CB 15CB 15CB 15CB 15CB 15CB 15CB 15CB 15	(EI) ST
	State O-T	706.		V SI FE 52 SELS	PP13 Featicides 608 Featicides 1080	mHg CF-WELV NBCV
	Fax # 401.273.	 508		Contair 520 520 520 530 530 530 530 530 530 530 530 530 53	8082 PCB 62 PCB	
	Collection Time	1	Pres Sode	Nutriber Type of 0 8260 vox 8021 8021 8021 ROM	SVOA 8081 Pesticides Pesticides	WEJWIS (I
11 6/21/11 1330	S X C	Sw-38		16	×	
12 clz/v 1333	3 × S	5.00-39		1 6	خہ	
13 6/21/11 1336	2 X S	540	1	1 6	*	
14 Galu 1338	S X S	Sw.41	•	75	×	
15 chally 1342	2 X S	Sw. 42	1	1 6	×	
14 6/20 11 1345	\$ X	& US-34		1 6	×	
(7) G ZI II 1348	8 X S	VB-35		2	X	
8551 111177 8	53 X S	V13-36		<u></u>	¥	
9 62111 1356	S × S	VB-37		2	*	
20 6 21 11 1359	SX XS	VB-28	••••	(2)	×	
Container Type: P-Poly G-Glass S-So	S-Sterile V-VOA Matrix: S-Soil	SD-Sol	ste Water GW-Ground Water	d Water SW-Surface Water	Water DW-Drinking Water	ter O-Oil W-Wipes F-Filters
Cooler Present Yes No	Internal Use Only	Preservation Code	1- NP, 2- HC1, 3- H ₂ SO ₆ , 4- HNO ₃ ,	5- NaOH,	6- MeOH, 7- Asorbic Acid, 8-	8- ZnAct, 9-
Seals Intact Yes No NA	NAZ [] Pickup	up Sampled by: Sepus	W Drissoll	***************************************	PARAMALA	
Cooler Temp: 4.6 (Ce	[] Technicians_	Comments: Res		3540		
Relinquished by: (Signature) Date/	Date/Time Received	Received by: (Signature) Date/Time	Relinquished by: (Signature)	ature) Date/Time	ne Received by: (Signature)	nature) Date/Time
- 1 3	٩	THE WAR THE STATE OF THE STATE				

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

Date/Time

Received by: (Signature)

Date/Time

Refinquished by: (Signature)

Date/Time

I (QMA) DIO Received by: (Signature)

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Date/Time

Received by: (Signature)

Date/Time

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6/21/11/160) Date/Time

Received by: (Signature)

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Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

CHAIN OF CUSTODY

3 of 4

Page

Reporting Limits

Turn Time Standard Other
If faster than 5 days, prior approval by laboratory is required # State where samples were collected from: ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486

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161, (401) 401-/101 Fax (401) 401-4400	1) 401-4400	MA (RI CI NH N) NY	ME Other	Elect	Electronic Deliverable	Yes X	0
www.esslaboratory.com		Is this profect for any of the following: MA-MCP	SACE Other	Form	Format: Excel & Access	s PDF Other	1
Co. Name		Project # Project Name (20 Cha. or less)			Circle and/orWrite	Circle and/orWrite Required Analysis	
Woodned & Curean		21930'S Sofery Kleen				(6	
Contact Person		Address 95 CEORE St.	\$1 \$1	ΗdΛ	HAS o⊼ss	8 (1) STV.I	
City Openidates	State O-1	Zip PO#		ς.	H, 41 809 Redicides	m\H Cb-WE NBC\	for earnered en mu
	# T	Email Address		108	2808		
ESS LAB Date Collection	}	XIX XIX	ə	NOA SE/BTEX	VOAS 0278	VET) STIV CE- L-BCEV	
Sample # Time	COM	Sample Identification (20 Char. or less)	qÝT		98		
3 Walv 1359	XX	DUP-VB-28	1 1 6		4		
20 6/2/11 135g	X S	MS- VB-28	5 1 1		X		
20 dal" 1389	57	MSD - VB- 28	5) 1 1		×		
22 6/21/11 1500	ΚS	52-43	711	-	×		
23 clap 1503	χS	5w-44	5 1 1		X		
24 day 1500	>	Sw-45	7 1 1		×		
125 Gz.(4 1509	X S	5w-46	7 1 1		K		
36 dalu 1512	ΚS	Sw-47	1 1 4		¥		
27 (ball 1515	XS	Sw-48	5 1 1		×		-
28 dalu 1518	XS	Sw-49	5 1 1		メ		
Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid	ile V-VOA Matrix	: S-Soil SD-Solid D-Sludge WW-Wasre Warer	GW-Ground Water	SW-Surface Water	ter DW-Drinking Water	Water O-Oil W-Wipes	Tipes F-Filters
Cooler Present X Yes No	Internal Use Only	re Only Preservation Code 1-NP, 2-HC1, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct,	, 3- H ₂ SO ₄ , 4- HNO ₃ , 5	NaOH, 6- M	eOH, 7- Asorbic Ac	id, 8- ZnAct, 9-	
Seals Intact Yes No NAX	A;X [] Pickup	Sampled by: Sepal Darkoll	77075				
Cooler Temp: J. 6	[] Technicians_	Comments:	WITH EXPERSION	100 3540	4		ſ

*By circling MA-MCB, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

0600 PDF __Other Раде_ Format: Excel A. Access Electronic Deliverable Reporting Limits CHAIN OF CUSTODY Tirm Time

N. Standard
Other
If faster than 5 days, prior approval by laboratory is required # Other Other Is this project for any of the following:
MA-MCP Navy USACE State where samples were collected from: Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7187 Fax (401) 461-4486 ESS Laboratory www.esslaboratory.com

F-Filters Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinkling Water O-Oil W-Wipes Preservation Code 1-NP, 2-HC1, 3-H2O4, 4-HNO4, 5-NaOH, 6-McOH, 7-Asorbic Acid, 8-ZnAct, 9-Write Required Analysis CCB_2 SOS<u>×</u> と Type of Containers J S J J J Number of Containers Pres Code Project Name (20 Chat, or less) Sofers Kleen Sample Identification (20 Char. or less) Email Address #Od Dup - 525- 49 MSD - Sw - 49 Su> 49 CEONG \$ VB-38 VR-39 S. . J.S. VR-40 VP-41 02503 28303 ZS. Project # Address 95 SS Internal Use Only S Ó **WYL**KIX 5 0 **(/**) 3 Y GKAB 4 \(\) COMP No NA:X Fax# Sage 1 Collection Time 5/8 1518 NS/S 524 1533 1527 1530 1521 Yes No Woodand & Cuarph Contact Person 1/12/9 Giy Rajadene 461 273, [807 11 17 P 6/21/2 <u>(お</u>) 621 K 621 Cooler Present 355 Telephone# Co. Name Sample # 8 Seals Intact ESS LAB 90 30 ſΥ S 3 Take Yall

Please fax all changes to Chain of Custody in writing.

*By circling MA-MCB, client acknowledges samples were collected in accordance with MADEP CAM VII A

1 (White) Lab Copy 2 (Yellow) Client Receipt

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Comments: Pes

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Cooler Temp:

[] Pickup

Sampled by: SEANS (Develor

Date/Time

Received by: (Signature)

Date/Time



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1107095

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director



Digitally signed by Laurel Stoddard Date: 2011.07.19 13:03:35 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107095

SAMPLE RECEIPT

The following samples were received on July 12, 2011 for the analyses specified on the enclosed Chain of Custody Record.

<u>SampleName</u>	<u>Matrix</u>	Analysis
SW-46A	Soil	8082
SW-45A	Soil	8082
SW-44A	Soil	8082
SW-51	Soil	8082
SW-52	Soil	8082
SW-53	Soil	8082
SW-54	Soil	8082
SW-55	Soil	8082
VB-42	Soil	8082
VB-43	Soil	8082
VB-44	Soil	8082
VB-45	Soil	8082
VB-46	Soil	8082
DUP-VB-46	Soil	8082
	SW-46A SW-45A SW-44A SW-51 SW-52 SW-53 SW-54 SW-55 VB-42 VB-43 VB-44 VB-45 VB-46	SW-46A Soil SW-45A Soil SW-44A Soil SW-51 Soil SW-52 Soil SW-53 Soil SW-54 Soil SW-55 Soil VB-42 Soil VB-43 Soil VB-44 Soil VB-45 Soil VB-46 Soil



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107095

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1107095-11

Percent difference between primary and confirmation results exceeds 40% (P).

Aroclor 1260

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

<u>Definitions of Quality Control Parameters</u>

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-46A

Date Sampled: 07/12/11 10:30

Percent Solids: Initial Volume: 5.4 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-01

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

8082 Polychlorinated Biphenyls (PCB)

TOE		THE	DEC
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			- •		
Analyte Aroclor 1016	Results (MRL) ND (0.193)	<u>Limit</u> 10	<u>DF</u>	<u>Analyzed</u> <u>Sequence</u> 07/13/11 16:06	Batch CG11219
Aroclor 1221	ND (0.193)	10	1	07/13/11 16:06	CG11219 CG11219
Aroclor 1232	ND (0.193)	10	1	07/13/11 16:06	CG11219
Aroclor 1242	ND (0.193)	10	1	07/13/11 16:06	CG11219
Arocior 1248	ND (0.193)	10	I	07/13/11 16:06	CG11219
Aroclor 1254	ND (0.193)	10	Í	07/13/11 16:06	CG11219
Aroclor 1260	ND (0.193)	10	1	07/13/11 16:06	CG11219
Aroclor 1262	ND (0.193)	10	1	07/13/11 16:06	CG11219
Aroclor 1268	ND (0.193)	10	1	07/13/11 16:06	CG11219

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	93 %		<i>30-150</i>
Surrogate: Decachlorobiphenyl [2C]	91 %		30-150
Surragate: Tetrachloro-m-xylene	<i>85</i> %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	88 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-45A Date Sampled: 07/12/11 10:35

Percent Solids: Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-02

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

8082 Polychlorinated Biphenyls (PCB)

RI	_	R	ΓS	n	m	C

Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.229)	10	i	07/13/11 16:25	CG11219
Aroclor 1221	ND (0.229)	10	1	07/13/11 16:25	CG11219
Aroclor 1232	ND (0.229)	10	1	07/13/11 16:25	CG11219
Aroclor 1242	ND (0.229)	10	1	07/13/11 16:25	CG11219
Aroclor 1248	ND (0.229)	10	1	07/13/11 16:25	CG11219
Aroclor 1254	ND (0.229)	10	1	07/13/11 16:25	CG11219
Aroclor 1260	ND (0.229)	10	1	07/13/11 16:25	CG11219
Aroclor 1262	ND (0.229)	10	American de la companya de la compan	07/13/11 16:25	CG11219
Aroclor 1268	ND (0.229)	10	1	07/13/11 16:25	CG11219

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	95 %		30-150
Surrogate: Decachlorobiphenyl [2C]	93 %		30-150
Surrogate: Tetrachioro-m-xylene	92 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	95 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-44A

Date Sampled: 07/12/11 10:40

Percent Solids: 98 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-03

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

8082 Polychlorinated Biphenyls (PCB)

RI -	RES	DEC
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Analyte Aroclor 1016	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1221	ND (0.200) ND (0.200)	10 10	1	07/13/11 16:43 07/13/11 16:43	CG11219 CG11219
Aroclor 1232	ND (0.200)	10	I	07/13/11 16:43	CG11219
Aroclor 1242	ND (0.200)	10	1	07/13/11 16:43	CG11219
Aroclor 1248	1.00 (0.200)	10	1	07/13/11 16:43	CG11219
Aroclor 1254	ND (0.200)	10	1	07/13/11 16:43	CG11219
Aroclor 1260	ND (0.200)	10	1	07/13/11 16:43	CG11219
Aroclor 1262	ND (0.200)	10	1	07/13/11 16:43	CG11219
Aroclor 1268	ND (0.200)	10	1	07/13/11 16:43	CG11219

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	%Recovery	Quaimer	LIMIT
Surrogate: Decachlorobiphenyl	88 %		30-150
Surrogate: Decachlorobiphenyl [2C]	87 %		30-150
Surrogate: Tetrachioro-m-xylene	98 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	100 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-51 Date Sampled: 07/12/11 15:50

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-04

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

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Analyte Aroclor 1016	Results (MRL) ND (0.230)	<u>Limit</u> 10	$\frac{\mathbf{DF}}{1}$	Analyzed Sequence 07/13/11 17:02	Batch CG11219
Aroclor 1221	ND (0.230)	10	1	07/13/11 17:02	CG11219
Aroclor 1232	ND (0.230)	10	1	07/13/11 17:02	CG11219
Aroclor 1242	ND (0.230)	10	1	07/13/11 17:02	CG11219
Aroclor 1248	1.97 (0.230)	10	1	07/13/11 17:02	CG11219
Aroclor 1254	ND (0.230)	10	1	07/13/11 17:02	CG11219
Aroclor 1260	0.434 (0.230)	10	1	07/13/11 17:02	CG11219
Aroclor 1262	ND (0.230)	10	1	07/13/11 17:02	CG11219
Aroclor 1268	ND (0.230)	10	1	07/13/11 17:02	CG11219

	MALOVETY	Quanner	Littus
Surrogate: Decachlorobiphenyl	89 %		30-150
Surrogate: Decachlorobiphenyl [ZC]	90 %		30-150
Surrogate: Tetrachloro-m-xylene	91 %		30-150
Surrogate: Tetrachioro-m-xylene [2C]	96 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-52 Date Sampled: 07/12/11 15:55

Percent Solids: 96 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540

96

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-05

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	EC .			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	<u>Batch</u>
Arocior 1016	ND (0.204)	10	I	07/13/11 17:21		CG11219
Aroclor 1221	ND (0.204)	10	1	07/13/11 17:21		CG11219
Aroclor 1232	ND (0.204)	10	1	07/13/11 17;21		CG11219
Aroclor 1242	ND (0.204)	10	1	07/13/11 17:21		CG11219
Aroclor 1248	ND (0.204)	10	1	07/13/11 17:21		CG11219
Aroclor 1254	6.45 (1.02)	10	5	07/14/11 21:32		CG11219
Aroclor 1260	1.07 (0.204)	10	1	07/13/11 17:21		CG11219
Aroclor 1262	ND (0.204)	10	1	07/13/11 17:21		CG11219
Aroclor 1268	ND (0.204)	10	1	07/13/11 17:21		CG11219

Qualifier

Limits

	,	
Surrogate: Decachlorobiphenyl	92 %	30-150
Surrogate: Decachlorobiphenyl [2C]	91 %	30-150
Surrogate: Tetrachloro-m-xylene	99 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	98 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-53 Date Sampled: 07/12/11 16:00

Percent Solids: Initial Volume: 5.5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-06

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

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<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.202)	10	1	07/13/11 17:40	CG11219
Aroclor 1221	ND (0.202)	10	1	07/13/11 17:40	CG11219
Aroclor 1232	ND (0.202)	10	1	07/13/11 17:40	CG11219
Aroclor 1242	ND (0.202)	10	1	07/13/11 17:40	CG11219
Aroclor 1248	ND (0.202)	10	1	07/13/11 17:40	CG11219
Aroclor 1254	7.30 (1.01)	10	5	07/14/11 21:51	CG11219
Aroclor 1260	6.22 (1.01)	10	5	07/14/11 21:51	CG11219
Aroclor 1262	ND (0.202)	10	1	07/13/11 17:40	CG11219
Aroclor 1268	ND (0.202)	10	1	07/13/11 17:40	CG11219

	PORECOVERY	Quanner	LHINLS
Surrogate: Decachlorobiphenyl	<i>96</i> %		30-150
Surrogate: Decachlorobiphenyl [2C]	<i>85</i> %		30-150
Surrogate: Tetrachloro-m-xylene	<i>95</i> %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	94 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-54 Date Sampled: 07/12/11 16:05

Percent Solids: 77 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-07

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DI	EC		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.255)	10	1	07/13/11 17:59	CG11219
Aroclor 1221	ND (0.255)	10	1	07/13/11 17:59	CG11219
Aroclor 1232	ND (0.255)	10	1	07/13/11 17:59	CG11219
Aroclor 1242	ND (0.255)	10	1	07/13/11 17:59	CG11219
Aroclor 1248	ND (0.255)	10	1	07/13/11 17:59	CG11219
Aroclor 1254	1.46 (0.255)	10	1	07/13/11 17:59	CG11219
Aroclor 1260	0.681 (0.255)	10	1	07/13/11 17:59	CG11219
Aroclor 1262	ND (0.255)	10	1	07/13/11 17:59	CG11219
Aroclor 1268	ND (0.255)	10	1	07/13/11 17:59	CG11219

Qualifier

Limits

	, -	
Surrogate: Decachlorobiphenyl	88 %	30-150
Surrogate: Decachlorobiphenyl [2C]	86 %	30-150
Surrogate: Tetrachioro-m-xylene	90 %	<i>30-150</i>
Surrogate: Tetrachloro-m-xylene [2C]	91 %	<i>30-150</i>

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-55 Date Sampled: 07/12/11 16:10

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-08

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

		-				
<u>Analyte</u>	Results (MRL)		<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.233)		10	1	07/13/11 18:18	CG11219
Aroclor 1221	ND (0.233)		10	1	07/13/11 18:18	CG11219
Aroclor 1232	ND (0.233)		10	1	07/13/11 18:18	CG11219
Aroclor 1242	ND (0.233)		10	1	07/13/11 18:18	CG11219
Aroclor 1248	ND (0.233)		10	1	07/13/11 18:18	CG11219
Aroclor 1254	4.33 (0.233)		10	1	07/13/11 18:18	CG11219
Aroclor 1260	1.03 (0.233)		10	1	07/13/11 18:18	CG11219
Aroclor 1262	ND (0.233)		10	1	07/13/11 18:18	CG11219
Aroclor 1268	ND (0.233)		10	1	07/13/11 18:18	CG11219
	%Recovery	Qualifier	Limits		- 11 - 13 - 13 - 13 - 13 - 13 - 13 - 13	

	,	
Surrogate: Decachlorobiphenyl	<i>85 %</i>	30-150
Surrogate: Decachlorobiphenyl [2C]	91 %	30-150
Surrogate: Tetrachloro-m-xylene	98 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	88 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-42 Date Sampled: 07/12/11 16:15

Percent Solids: 80 Initial Volume: 5.3 Final Volume: 10

Aroclor 1262

Aroclor 1268

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-09

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES D	EC		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.236)	10	1	07/13/11 18:36	CG11219
Aroclor 1221	ND (0.236)	10	1	07/13/11 18:36	CG11219
Aroclor 1232	ND (0.236)	10	1	07/13/11 18:36	CG11219
Aroclor 1242	ND (0.236)	10	1	07/13/11 18:36	CG11219
Aroclor 1248	ND (0.236)	10	1	07/13/11 18:36	CG11219
Aroclor 1254	9.82 (1.18)	10	5	07/14/11 22:10	CG11219
Aroclor 1260	7.20 (1.18)	10	5	07/14/11 22:10	CG11219

Qualifier

10

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Surrogate: Decachlorobiphenyl	93 %		30-150
Surrogate: Decachlorobiphenyl [2C]	87 %		30-150
Surrogate: Tetrachloro-m-xylene	71 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	93 %		30-150

%Recovery

ND (0.236)

ND (0.236)

07/13/11 18:36

07/13/11 18:36

CG11219

CG11219



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-43 Date Sampled: 07/12/11 16:20

Percent Solids:

84 5.1

Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-10

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

8082 Polychlorinated Biphenyls (PCB)

DI		DEC	DEC
KI	-	KLO	DEC

		14 144					
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch	
Aroclor 1016	ND (0.233)	10	1	07/13/11 18:55		CG11219	
Aroclor 1221	ND (0.233)	10	1	07/13/11 18:55		CG11219	
Aroclor 1232	ND (0.233)	10	1	07/13/11 18:55		CG11219	
Aroclor 1242	ND (0.233)	10	1	07/13/11 18:55		CG11219	
Aroclor 1248	ND (0.233)	10	1	07/13/11 18:55		CG11219	
Aroclor 1254	3.61 (0.233)	10	1	07/13/11 18:55		CG11219	
Aroclor 1260	6.66 (1.17)	10	5	07/14/11 22:29		CG11219	
Aroclor 1262	ND (0.233)	10	1	07/13/11 18:55		CG11219	
Aroclor 1268	ND (0.233)	10	1	07/13/11 18:55		CG11219	

Qualifier

Surrogate: Decachlorobiphenyl	88 %	30-150
Surrogate: Decachlorobiphenyl [2C]	81 %	30-150
Surrogate: Tetrachloro-m-xylene	93 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	90 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-44 Date Sampled: 07/12/11 16:25

Percent Solids: 81 Initial Volume: 5.2 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-11

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

			RI - RES D	EC		
Analyte Aroclor 1016	Results (MRL)		<u>Limit</u>	$\underline{\mathbf{DF}}$	Analyzed Sequenc	
Aroclor 1221	ND (0.237) ND (0.237)		10 10	1	07/13/11 19:14 07/13/11 19:14	CG11219 CG11219
Aroclor 1232	ND (0.237)		10	1	07/13/11 19:14	CG11219
Aroclor 1242	ND (0.237)		10	1	07/13/11 19:14	CG11219
Aroclor 1248	12.8 (1.19)		10	5	07/14/11 22:48	CG11219
Aroclor 1254	ND (0.237)		10	1	07/13/11 19:14	CG11219
Aroclor 1260	P 2.03 (0.237)		10	1	07/13/11 19:14	CG11219
Aroclor 1262	ND (0.237)		10	1	07/13/11 19:14	CG11219
Aroclor 1268	ND (0.237)		10	1	07/13/11 19:14	CG11219
	%Recove	ry Qualifier	Limits			
Surrogate: Decachlorobiphenyl	91 %	i	30-150			
Surrogate: Decachlorobiphenyl [2C]	81 %	•	30-150			

	701CCOVCIY	Quanner	Linus
Surrogate: Decachlorobiphenyl	91 %		30-150
Surrogate: Decachlorobiphenyl [2C]	81 %		30-150
Surrogate: Tetrachloro-m-xylene	73 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	Q7 9/s		20_150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

74

Client Project ID: SK Cranston Client Sample ID: VB-45 Date Sampled: 07/12/11 16:30

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-12

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

8082 Polychlorinated Biphenyls (PCB)

DТ	DEC	DEC

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.270)	Limit	<u>DF</u>	Analyzed Sequence 07/13/11 19:33	<u>Batch</u> CG11219
Aroclor 1221	ND (0.270)	10	1	07/13/11 19:33	CG11219
Aroclor 1232	ND (0.270)	10	1	07/13/11 19:33	CG11219
Aroclor 1242	ND (0.270)	10	1	07/13/11 19:33	CG11219
Aroclor 1248	ND (0.270)	10	1	07/13/11 19:33	CG11219
Aroclor 1254	1.82 (0.270)	10	1	07/13/11 19:33	CG11219
Aroclor 1260	2.83 (0.270)	10	1	07/13/11 19:33	CG11219
Aroelor 1262	ND (0.270)	10	1	07/13/11 19:33	CG11219
Aroclor 1268	ND (0.270)	10	1	07/13/11 19:33	CG11219

Oualifier

	70110001017	· ·	2.77770
Surrogate: Decachlorobiphenyl	94 %		30-150
Surrogate: Decachlorobiphenyl [2C]	94 %		30~150
Surrogate: Tetrachloro-m-xylene	104 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	96 %		30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Client Sample ID: VB-46 Date Sampled: 07/12/11 16:35

Percent Solids: 71 Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-13

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

]	RI - RES D	EC		
<u>Analyte</u>	Results (MRL)		<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.276)		10	1	07/13/11 19:52	CG11219
Aroclor 1221	ND (0.276)		10	1	07/13/11 19:52	CG11219
Aroclor 1232	ND (0.276)		10	1	07/13/11 19:52	CG11219
Aroclor 1242	ND (0.276)		10	1	07/13/11 19:52	CG11219
Aroclor 1248	10.2 (1.38)		10	5	07/14/11 23:06	CG11219
Aroclor 1254	ND (0.276)		10	1	07/13/11 19:52	CG11219
Aroclor 1260	1.44 (0.276)		10	1	07/13/11 19:52	CG11219
Aroclor 1262	ND (0.276)		10	1	07/13/11 19:52	CG11219
Aroclor 1268	ND (0.276)		10	1	07/13/11 19:52	CG11219
	%Recovery	Qualifier	Límits			

Surrogate: Decachlorobiphenyl	<i>86</i> %	30-150
Surrogate: Decachlorobiphenyl [2C]	90 %	30-150
Surrogate: Tetrachloro-m-xylene	60 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	84 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: DUP-VB-46

Date Sampled: 07/12/11 16:35

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107095 ESS Laboratory Sample ID: 1107095-14

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/12/11 19:00

Dī		DEC	DEC
Κł	-	K F N	

Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Seque		
	ND (0.263)	10	1	07/13/11 20:48	CG11219	
	ND (0.263)	10	1	07/13/11 20:48	CG11219	
	ND (0.263)	10	1	07/13/11 20:48	CG11219	
Aroclor 1242	ND (0.263)	10	1	07/13/11 20:48	CG11219	
Aroclor 1248	11.6 (1.32)	10	5	07/14/11 23:25	CG11219	
Aroclor 1254	ND (0.263)	10	1	07/13/11 20:48	CG11219	
Aroclor 1260	1.67 (0.263)	10	1	07/13/11 20:48	CG11219	
Aroclor 1262	ND (0.263)	10	1	07/13/11 20:48	CG11219	
Aroclor 1268	ND (0.263)	10	1	07/13/11 20:48	CG11219	

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	84 %		30-150
Surrogate: Decachlorobiphenyl [2C]	89 %		30-150
Surrogate: Tetrachloro-m-xylene	61 %		30-150
Surrogate; Tetrachloro-m-xylene [2C]	83 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107095

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
			chlorinated B							- Cannot
Batch CG11219 - 3540				-						
Blank	***									
Arador 1916	ND	0.0500	mg/kg wet							
Aroclor 1221 Aroclor 1232	ND	0.0500	mg/kg wet							
	ND	0.0500	mg/kg wet							
Aradar 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surragate: Decachlorobiphenyl	0.0235		mg/kg wet	0.02500		94	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0219		mg/kg wet	0.02500		88	30-150			
Surrogate: Tetrachloro-m-xylene	0.0226		mg/kg wet	0.02500		90	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0234		mg/kg wet	0.02500		94	30-150			
LCS										***************************************
Aroclor 1016	0.471	0,0500	mg/kg wet	0.5000	·	94	40-140			
Araclor 1260	0.481	0.0500	mg/kg wet	0.5000		96	40-140			
Surrogate: Decachlorobiphenyl	0.0246		mg/kg wet	0.02500		98	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0232		mg/kg wet	0.02500		93	30-150			
Surrogate: Tetrachloro-m-xylene	0.0241		mg/kg wet	0.02500		97	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0237		mg/kg wet	0.02500		95	30-150			
LCS Dup								***************************************		***************************************
Aroclor 1016	0.461	0.0500	mg/kg wet	0.5000		92	40-140	2	50	
Aroclor 1260	0.483	0.0500	mg/kg wet	0.5000		97	40-140	0.5	50	
Surrogate: Decachlorobiphenyl	0.0240		mg/kg wet	0.02500		96	30-150			
Surrogate: Decachloroblphenyl [2C]	0.0226		mg/kg wet	0.02500		90	30-150			
Surrogate: Tetrachloro-m-xylene	0.0230		mg/kg wet	0.02500		92	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0224		mg/kg wet	0.02500		90	30-150			
Matrix Spike Source: 1107095-13			***************************************							***************************************
Aroclor 1016	3.69	0.276	mg/kg dry	2,762	ND	134	40-140			
Aroclor 1260	3.27	0.276	mg/kg dry	2.762	1.44	66	40-140			
Currental Connectionalistant	0.136		mg/kg dry	0.1381		99	30-150			
Surragate: Decachlorobiphenyl	0.136		mg/kg dry	0.1381		99 98	30-150 30-150			
Surrogate: Decachiorobiphenyl [2C] Surrogate: Tetrachloro-m-xylene	0.0998		mg/kg dry	0.1381		72	30-150 30-150			
Surrogate: Tetrachloro-m-xylene Surrogate: Tetrachloro-m-xylene [2C]	0.120		mg/kg dry	0.1381		87	30-150 30-150			
Matrix Spike Dup Source: 1107095-13			3, 19 4. 1	**************************************			55 256			
Aroclor 1016	3.70	0.282	ma/ko day	7 217	NIC.	f 31	40.140	0.4	EA	*
Aroclor 1260	3.41	0.282	mg/kg dry mg/kg dry	2.817 2.817	ND 1.44	131 70	40-140 40-140	0.4 4	50 50	
								,		-
Surrogate: Decachlorobiphenyl	0.152		mg/kg dry	0.1408		108	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.150		mg/kg dry	0.1408		106	30-150			
Surrogate: Tetrachloro-m-xylene	0.0951		mg/kg dry	0.1408		68	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107095

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
		8082 Polyc	hlorinated E	Biphenyls	(PCB)					
Batch CG11219 - 3540										
Surregates Tetrachlere en udena (201	0.117		ma/ka dry	0 1408		83	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107095

Notes and Definitions

U	Analyte included in the analysis, but not detected
P	Percent difference between primary and confirmation results exceeds 40% (P).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107095

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/out state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: R1002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141 Lead Paint, Lead in Children's Metals Jewelry http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Woodard & Curran
Client Project ID: ______
Shipped/Delivered Via: ESS Courier

ESS Project ID: 11070095
Date Project Due: 7/19/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: 5.9		16. Are ESS labels on correct containers?(YesiNo
Iced With: Icepacks		17. Were samples received intact?	resino
6. Was COC included with samples?	Yes	ESS Sample IDs:	_
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	
18. Was there need to call project manag	er to discu	iss status? If yes, please explain.	
Who was called?:		By whom?	

_		•			
Sample Numbe	r Properly Preserved	Container Type	# of Containers	Preservative	
1	Yes	4 oz Soil Jar	1	NP	
2 ~	Yes	4 oz Soil Jar	1	NP	
3	Yes	4 oz Soil Jar	1	N₽	
4	Yes	4 oz Soil Jar	1	NP	
5	Yes	4 oz Soil Jar	1	NP	
6	Yes	4 oz Soil Jar	1	NP	
7	Yes	4 oz Soil Jar	1	NP	
8	Yes	4 oz Soil Jar	1	NP	
9	Yes	4 oz Soil Jar	1	ΝP	
10	Yes	4 oz Soil Jar	1	NP	
11	Yes	4 oz Soil Jar	1	NP	
12	Yes	4 oz Soil Jar	1	NP	
13	Yes	4 oz Soil Jar	3	NP	
14 .	- o Y Yes	4 oz Soil Jar	. / , 1	NP	
Completed By:	YYIL	ate/Time:	(12/1)		
Reviewed By:	143 D	ate/Time:7	<u> </u>		

CHAIN OF CUSTODY

Turn Time

Standard

Other

If faster than 5 days, prior approval by laboratory is required #

ESS LAB PROTECT

Reporting Limits

Yes

Electronic Deliverable

Other

State where samples were collected from:
MA THE CT NH NJ NY ME

o.

Page 1

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

www.esslaboratory.com	Is this pro MA-MCI	Is this project for any of the following: MA-MCP Navy USACE	Other			Format: Excel KAc	Excel KAccess	 }	7 B	rer	
	Project #	Project Name (20 Char. or less)				Circle	and/orWri	te Require	Circle and/orWrite Required Analysis		
Mordael & Curen	2H3o3	Specy Klego		<u> </u>	_	8					
(Kan)	Address Cec	CEDAR St.	\$1:	524.2		809 काम्प EЫН	8270 PAH * PCE) STVLS Z	SJ.	-	
State	4Z 4Z	PO#	ənisən		8015	909 \ ### ### OBG	Pessicide 25	NBC NBC]/m		
Fax #	273 506	Email Address	O You	Z9 C	EX CE 100	8087 H EI LEH	PCBASE RCRAS	8FX.	(ET)		
Date Collection		Sample Identification (20 Char. or less)	Pres Code Numbe	Type of 826	WLBEVE 805	1808 1907 13	Pesticides SVO SVO	METALS.	STVITW		
1030	X S SW-46A	ہد) 1	6		<u>×</u>					
1035	X S Sw-45A			6		<u>×</u>					
25	XS SW-44A		1	2		*					
1550	X 5 50-51			7		<u>×</u>					
SSS1	XS 55-57		1	7		<u>×</u>					
1,600	x 5 SW-53		1 4	7		メ					-
333	X S 50-54		1 1	4		≫					
0191 11/21/1	>> < 5 > ×		1	9		<i>></i>					
1615	X S V8-42		1 1	7		×	_				
1620	KS VB-43		1	3		.×.		:			
Container Type: P-Poly G-Glass S-Sterile V-VOA	A Matrix: S-Soil SD-Solid	D-Sludge WW-Waste Water	GW-Ground Water		SW-Surface Water		DW-Drinking Water		O-Oil W.	W-Wipes F	F-Filters
Yes No	Internal Use Only Pre	reservation Code 1- NR, 2- HC1, 3- H _s SO ₄ , 4- HNO ₃ , 5- NaOH, 6- McOH, 7- Asorbic Acid, 8- ZnAct, 9-	LSO4, 4- F	INOs, 5-	NaOH, 6	MeOH,	7- Asorbic	Acid, 8- Z	nAct, 9-		

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

Extenction Date/Time

2004

₹082 w

Comments: PCB 3

[] Technicians_

SER DESCOL

Sampled by:

[] Pickup

No NA:

,Kes

Seals Intact

Cooler Temp:

Relinquist

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

2/ / Z

Received by: (Signature)

Date/Time

Date/Time

ed by: (Signature)

Date/Jime

10/26/04 B

CHAIN OF CUSTODY K Standard Other Renorting 1 Technology

ESS Laboratory
Division of Thielsch Engineering, Inc.

しついないのではいって					† 		
Division of Thielsch Engineering, Inc.	•	Turn Time K Standard Other	Other	1	Reporting Limits	GI LYB PROJECT ID	JECT ID.
$\mathbf{\circ}$		ster than > days, prior approval by laborate unite complex uses collected from:	tory is required	#		7/0/1	
Tel. (401) 461-7181 Fax (401) 461-4486		(RI) CT NH NJ NY ME	Orher		Electronic Deliverable	Xes X	
www.esslaboratory.com	Is the MA	Is this project for any of the following: MA-MCP Navy USACE	E Other		Format: Excel	_ PDF_ 0	
Co. Name	Project #	Project Name (20 Char. or less)			Circle and/orWrit	Circle and/orWrite Required Analysis	
Mecchaels & Chappen	219303	SPET KLEEN					
Contact Person Lavelle Dorn	Address 95	CEDAR St.	S.I	T.4.2	PAH PAH SPH SPH	2	
וֹצו	22			510 5 1 7	8015 DRO PH 1 MH 41 MH 4	MCF-ME	
74	273 5087	Email Address		.9 (.9	H E HH	8FS	
Date Collection	CEASE	Sample Identification (20 Char. or less)	Pres Code Mumber	Type of T 8260 700 1208 18021	'd'I	METALS MCP- TCLP-RC	
11 712 1255	X S VB-44		7 1 1	4	X		
13 7/12/11 1630	X S VB-45		1 1	4	×		
1/2/1	X S VB.46	7	7 1 1	7	×		
1 7 W/21/4 W35	XIS DOB-VB	B-46	7 1 1	7	×		
	K15 MS-VB	0-46	7 1 1		×		
13 - 1 12 lu 1 103 c	KS MD-VB	3-46	7 1 1	4	×		
Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil		SD-Solid D-Sludge WW-Waste Water G	GW-Ground Water		SW-Surface Water DW-Drinking Water	g Water O-Oil W-Wipes	es F-Filters
Cooler Present Tes No	Internal Use Only	Preservation Code 1- NP, 2- HC1, 3- H2SO4, 4- HNO3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9-	H ₂ SO ₄ , 4- HN	Os, 5- NaOF	I, 6- McOH, 7- Asorbic	Acid, 8- ZnAct, 9-	
Seals Intact Yes No NA:	[] Pickup	Sampled by: Segn Darscoll	יסורי				
Cooler Temp:	[] Technicians	Comments: PCB's 8082	/m 78	_	3540 EXTRACTION		
14. C. 1. C.	n 11 (c)	Landing and Dalland	J. L. C.) I	Time	(C:	ra/Time

*By circling MA-MCR, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

10/26/04 B 1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

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The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1107159

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director



Digitally signed by Laurel Stoddard Date: 2011.07.22 16:31:31 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107159

SAMPLE RECEIPT

The following samples were received on July 15, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1107159-01	SW-56	Soil	8082
1107159-02	SW-57	Soil	8082
1107159-03	SW-58	Soil	8082
1107159-04	SW-39A	Soil	8082
1107159-05	SW-25A	Soil	8082
1107159-06	SW-41A	Soil	8082
1107159-07	SW-32A	Soil	8082
1107159-08	VB-47	Soil	8082
1107159-09	VB-48	Soil	8082
1107159-10	VB-49	Soil	8082
1107159-11	VB-50	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107159

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1107159-05

Surrogate recovery(ies) diluted below the MRL (SD).

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene

(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

<u>Definitions of Quality Control Parameters</u>

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-56 Date Sampled: 07/15/11 15:00

Percent Solids: Initial Volume: 5.2 Final Volume: 10 Extraction Method: 3540

80

ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-01

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

		RI - RES DI	E C		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.240)	10	1	07/18/11 16:10	CG11515
Aroclor 1221	ND (0.240)	10	1	07/18/11 16:10	CG11515
Aroclor 1232	ND (0.240)	10	1	07/18/11 16:10	CG11515
Aroclor 1242	ND (0.240)	10	1	07/18/11 16:10	CG11515
Aroclor 1248	9.57 (1.20)	10	5	07/19/11 11:11	CG11515
Aroclor 1254	10.6 (1.20)	10	5	07/19/11 11:11	CG11515
Aroclor 1260	ND (0.240)	10	1	07/18/11 16:10	CG11515
Aroclor 1262	ND (0.240)	10	1	07/18/11 16:10	CG11515
Aroclor 1268	ND (0.240)	10	1	07/18/11 16:10	CG11515

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	92 %		30-150
Surrogate: Decachlorobiphenyl [2C]	110 %		30-150
Surrogate: Tetrachloro-m-xylene	<i>57 %</i>		30-150
Surrogate: Tetrachloro-m-xylene [2C]	83 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-57 Date Sampled: 07/15/11 15:05

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-02

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

TOT		-	TIC	
RI	_	ĸ		DEC

Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.245)	10	1	07/18/11 16:29	CG11515
Aroclor 1221	ND (0.245)	10	1	07/18/11 16:29	CG11515
Aroclor 1232	ND (0.245)	10	1	07/18/11 16:29	CG11515
Aroclor 1242	ND (0.245)	10	1	07/18/11 16:29	CG11515
Aroclor 1248	17.3 (1.23)	10	5	07/19/11 11:49	CG11515
Aroclor 1254	16.6 (1.23)	10	5	07/19/11 11:49	CG11515
Aroclor 1260	ND (0.245)	10	1	07/18/11 16:29	CG11515
Aroelor 1262	ND (0.245)	10	1	07/18/11 16:29	CG11515
Aroclor 1268	ND (0.245)	10	1	07/18/11 16:29	CG11515

	Yokecovery	Quaimer	LITTICS
Surrogate: Decachlorobiphenyl	104 %		30-150
Surrogate: Decachlorobiphenyl [2C]	117 %		30-150
Surrogate: Tetrachioro-m-xylene	60 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	97 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-58 Date Sampled: 07/15/11 15:10

Percent Solids: 80 Initial Volume: 5 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-03

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

TOT		RES	٠,	n	
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Analyte Aroclor 1016	Results (MRL) ND (0.250)	Limit 10	<u>DF</u>	Analyzed Sequence 07/18/11 17:07	Batch CG11515
Aroclor 1221	ND (0.250)	10	1	07/18/11 17:07	CG11515
Aroclor 1232	ND (0.250)	10	1	07/18/11 17:07	CG11515
Aroelor 1242	ND (0.250)	10	1	07/18/11 17:07	CG11515
Aroclor 1248	ND (0.250)	10	1	07/18/11 17:07	CG11515
Aroclor 1254	7.81 (0.500)	10	2	07/19/11 12:27	CG11515
Aroclor 1260	1.55 (0.250)	10	1	07/18/11 17:07	CG11515
Aroclor 1262	ND (0.250)	10	1	07/18/11 17:07	CG11515
Aroclor 1268	ND (0.250)	10	1	07/18/11 17:07	CG11515

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	80 %		30-150
Surrogate: Decachlorobiphenyl [2C]	78 %		30-150
Surrogate: Tetrachloro-m-xylene	86 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	83 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-39A Date Sampled: 07/15/11 15:15

Percent Solids: 87 Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-04

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

8082 Polychlorinated Biphenyls (PCB)

TOT		DEC	DE/	۰,
RI	_	RES		

Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.230)	10	1	07/18/11 17:44	CG11515
Arocler 1221	ND (0.230)	10	1	07/18/11 17:44	CG11515
Aroclor 1232	ND (0.230)	10	1	07/18/11 17:44	CG11515
Aroclor 1242	ND (0.230)	10	1	07/18/11 17:44	CG11515
Aroclor 1248	ND (0.230)	10	1	07/18/11 17:44	CG11515
Aroclor 1254	1.74 (0.230)	10	1	07/18/11 17:44	CG11515
Aroclor 1260	0.361 (0.230)	10	1	07/18/11 17:44	CG11515
Aroclor 1262	ND (0.230)	10	1	07/18/11 17:44	CG11515
Aroclor 1268	ND (0.230)	10	1	07/18/11 17:44	CG11515

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	MACOVERY	Qualifier	Littics
Surrogate; Decachlorobiphenyl	79 %		30-150
Surrogate: Decachlorobiphenyl [2C]	95 %		30-150
Surrogate: Tetrachloro-m-xylene	76 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	83 %		30-150

Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-25A Date Sampled: 07/15/11 15:20

Percent Solids: 83 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-05

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

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RI	- RES	IJPA.

Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Seque	
Aroclor 1016	ND (4.72)	10	20	07/22/11 10:03	CG11515
Aroclor 1221	ND (4.72)	10	20	07/22/11 10:03	CG11515
Aroclor 1232	ND (4.72)	10	20	07/22/11 10:03	CG11515
Aroclor 1242	ND (4.72)	10	20	07/22/11 10:03	CG11515
Aroclor 1248	56.1 (4.72)	10	20	07/22/11 10:03	CG11515
Aroclor 1254	56.8 (4.72)	10	20	07/22/11 10:03	CG11515
Aroclor 1260	ND (4.72)	10	20	07/22/11 10:03	CG11515
Aroclor 1262	ND (4.72)	10	20	07/22/11 10:03	CG11515
Aroclor 1268	ND (4.72)	10	20	07/22/11 10:03	CG11515

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachioro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-41A Date Sampled: 07/15/11 15:25

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-06

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC	٢

Analyte Aroclor 1016	Results (MRL) ND (0.233)	Limit	<u>DF</u>	<u>Analyzed</u> <u>Sequence</u> 07/18/11 18:59	Batch CG11515
Aroclor 1221	ND (0.233)	10	1	07/18/11 18:59	CG11515
Aroelor 1232	ND (0.233)	10	1	07/18/11 18:59	CG11515
Aroclor 1242	ND (0.233)	10	1994	07/18/11 18:59	CG11515
Aroclor 1248	23.6 (2.33)	10	10	07/19/11 14:58	CG11515
Aroclor 1254	25.0 (2.33)	10	10	07/19/11 14:58	CG11515
Aroclor 1260	ND (0.233)	10	1	07/18/11 18:59	CG11515
Aroclor 1262	ND (0.233)	10	1	07/18/11 18:59	CG11515
Aroclor 1268	ND (0.233)	10	1	07/18/11 18:59	CG11515

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	70RELOVET Y	Quantier	LITELS
Surrogate: Decachlorobiphenyl	93 %		30-150
Surrogate: Decachlorobiphenyl [2C]	96 %		30-150
Surrogate: Tetrachloro-m-xylene	58 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	79 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

98

Client Project ID: SK Cranston Client Sample ID: SW-32A Date Sampled: 07/15/11 15:30

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-07

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

		RI - RES DI	EC		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.204)	10	1	07/19/11 0:38	CG11515
Aroclor 1221	ND (0.204)	10	1	07/19/11 0:38	CG11515
Aroclor 1232	ND (0.204)	10	1	07/19/11 0:38	CG11515
Aroclor 1242	ND (0.204)	10	1	07/19/11 0:38	CG11515
Aroclor 1248	1.03 (0.204)	10	1	07/19/11 0:38	CG11515
Aroclor 1254	ND (0.204)	10	1	07/19/11 0:38	CG11515
Aroclor 1260	ND (0.204)	10	1	07/19/11 0:38	CG11515
Aroclor 1262	ND (0.204)	10	1	07/19/11 0:38	CG11515
Aroclor 1268	ND (0.204)	10	1	07/19/11 0:38	CG11515

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	96 %		30-150
Surrogate: Decachlorobiphenyl [2C]	95 %		30-150
Surrogate: Tetrachloro-m-xylene	85 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	89 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-47

Date Sampled: 07/15/11 15:35

Percent Solids:

Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-08

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

Analyte Aroclor 1016	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	
Aroclor 1016 Aroclor 1221	ND (0.211) ND (0.211)	10 10	1	07/19/11 1:16 07/19/11 1:16	CG11515 CG11515
Aroclor 1232	ND (0.211)	10	1	07/19/11 1:16	CG11515
Aroclor 1242	ND (0.211)	10	1	07/19/11 1:16	CG11515
Aroclor 1248	1.35 (0.211)	10	1	07/19/11 1:16	CG11515
Aroclor 1254	1.72 (0.211)	10	1	07/19/11 1:16	CG11515
Aroclor 1260	ND (0.211)	10	1	07/19/11 1:16	CG11515
Aroclor 1262	ND (0.211)	10	1	07/19/11 1:16	CG11515
Aroclor 1268	ND (0.211)	10	1	07/19/11 1:16	CG11515

	%Recovery	Quaimer	LIMICS
Surrogate: Decachlorobíphenyl	<i>75</i> %		30-150
Surrogate: Decachlorobiphenyl [2C]	81 %		30-150
Surrogate: Tetrachloro-m-xylene	56 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	75 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Client Sample ID: VB-48 Date Sampled: 07/15/11 15:40

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-09

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES D

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	THE TRUST PLE				
Analyte Aroolor 1016	Results (MRL) ND (0.244)	<u>Limit</u> 10	$\frac{\mathbf{DF}}{1}$	Analyzed Sequence 07/19/11 1:54	Batch CG11515
Aroclor 1221	ND (0.244)	10	1	07/19/11 1:54	CG11515
Aroclor 1232	ND (0.244)	10	1	07/19/11 1:54	CG11515
Aroclor 1242	ND (0.244)	10	1	07/19/11 1:54	CG11515
Aroclor 1248	ND (0.244)	10	1	07/19/11 1:54	CG11515
Aroclor 1254	1.84 (0.244)	10	1	07/19/11 1:54	CG11515
Aroclor 1260	ND (0.244)	10	1	07/19/11 1:54	CG11515
Aroclor 1262	ND (0.244)	10	1	07/19/11 1:54	CG11515
Arocior 1268	ND (0.244)	10	1	07/19/11 1:54	CG11515

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	runced rery	Quantier	Limb
Surrogate: Decachlorobiphenyl	74 %		30-150
Surrogate: Decachlorobiphenyl [2C]	79 %		30-150
Surrogate: Tetrachloro-m-xylene	59 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	<i>73 %</i>		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-49 Date Sampled: 07/15/11 15:45

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-10

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

DI		RES	DEC
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III IES DEC						
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch	
Aroclor 1016	ND (0.239)	10	1	07/19/11 2:32	CG11515	
Aroclor 1221	ND (0.239)	10	1	07/19/11 2:32	CG11515	
Aroelor 1232	ND (0.239)	10	1	07/19/11 2:32	CG11515	
Aroclor 1242	ND (0.239)	10	1	07/19/11 2:32	CG11515	
Aroclor 1248	ND (0.239)	10	1	07/19/11 2:32	CG11515	
Aroclor 1254	2.85 (0.239)	10	1	07/19/11 2:32	CG11515	
Aroelor 1260	ND (0.239)	10	1	07/19/11 2:32	CG11515	
Aroelor 1262	ND (0.239)	10	1	07/19/11 2:32	CG11515	
Aroclor 1268	ND (0.239)	10	1	07/19/11 2:32	CG11515	

	%kecovery	Quaimer	LIMITS
Surrogate: Decachlorobiphenyl	<i>85</i> %		30-150
Surrogate: Decachlorobiphenyl [2C]	92 %		30-150
Surrogate: Tetrachloro-m-xylene	84 %		30-150
Surrogate: Tetrachioro-m-xylene [2C]	<i>79 %</i>		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-50 Date Sampled: 07/15/11 15:50

Percent Solids: 88 Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107159 ESS Laboratory Sample ID: 1107159-11

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 7/15/11 18:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DI	EC			
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	Batch
Aroctor 1016	ND (0.219)	10	1	07/19/11 3:10		CG11515
Aroclor 1221	ND (0.219)	10	1	07/19/11 3:10		CG11515
Aroclor 1232	ND (0.219)	10	I	07/19/11 3:10		CG11515
Aroclor 1242	ND (0.219)	10	1	07/19/11 3:10		CG11515
Aroclor 1248	ND (0.219)	10	1	07/19/11 3:10		CG11515
Aroclor 1254	0.417 (0.219)	10	1	07/19/11 3:10		CG11515
Aroclor 1260	ND (0.219)	10	1	07/19/11 3:10		CG11515
Aroclor 1262	ND (0.219)	10	1	07/19/11 3:10		CG11515
Aroclor 1268	ND (0.219)	10	1	07/19/11 3:10		CG11515

Oualifier

Limits

	,	2	
Surrogate: Decachlorobiphenyl	90 %		30-150
Surrogate: Decachlorobiphenyl [2C]	88 %		30-150
Surrogate: Tetrachloro-m-xylene	104 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	89 %		30-150



Result

MRŁ

BAL Laboratory

The Microbiology Division of Thielsch Engineering, Inc.



Qualifier

RPD

Limit

CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Analyte

Surrogate: Tetrachioro-m-xyiene [2C]

ESS Laboratory Work Order: 1107159

%REC

%REC

Limits

RPD

Quality Control Data

Units

Spike

Level

Source

Result

		8082 Polyo	chlorinated B	iphenyls (PCB))				
Batch CG11515 - 3540								ma	
Blank									
Aroclor 1016	ND	0.0500	mg/kg wet						
Aroclor 1221	ND	0.0500	mg/kg wet						
Aroclor 1232	ND	0.0500	mg/kg wet						
Aroclor 1242	ND	0.0500	mg/kg wet						
Aroclor 1248	ND	0.0500	mg/kg wet						
Aroclor 1254	ND	0.0500	mg/kg wet						
Aroclor 1260	ND	0.0500	mg/kg wet						
Aroclor 1262	ND	0.0500	mg/kg wet						
Aroclor 1268	ND	0.0500	mg/kg wet						
Surrogate: Decachlorobiphenyl	0.0204		mg/kg wet	0.02500	81	30-150			
Surrogate: Decachlorobiphenyl [2C]	0,0198		mg/kg wet	0.02500	<i>79</i>	30-150			
Surrogate: Tetrachloro-m-xylene	0,0211		mg/kg wet	0.02500	84	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0217		mg/kg wet	0.02500	87	30-150			
LCS		******	-						***
Aroclor 1016	0.438	0.0500	mg/kg wet	0.5000	88	40-140			
Aroclor 1260	0.418	0.0500	mg/kg wet	0.5000	84	40-140			
Surrogate: Decachlorobiphenyl	0.0209		mg/kg wet	0.02500	84	30-150			
Surrogate: Decachiorobiphenyl [2C]	0.0206		mg/kg wet	0.02500	82	30-150			
Surrogate: Tetrachloro-m-xylene	0.0221		mg/kg wet	0.02500	89	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0215		mg/kg wet	0.02500	86	30-150			
LCS Dup					***************************************			W	
Aroclor 1016	0.428	0.0500	mg/kg wet	0.5000	86	40-140	2	50	
Aroclor 1260	0.416	0.0500	mg/kg wet	0.5000	83	40-140	0.6	50	
Surrogate: Decachlorobiphenyl	0.0206		mg/kg wet	0,02500	83	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0202		mg/kg wet	0,02500	81	30-150			
Surrogate: Tetrachloro-m-xylene	0.0217		mg/kg wet	0,02500	87	30-150			

0.0211

mg/kg wet

30-150

0.02500



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston ESS Laboratory Work Order: 1107159

Notes and Definitions

\mathbf{U}	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.

[CALC] Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107159

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/out state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141 Lead Paint, Lead in Children's Metals Jewelry http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client:	Woodard 8	& Curran	
Client P	roject ID:		
Shipped	I/Delivered	l Via:	<u>Client</u>

ESS Project ID: 11070159
Date Project Due: 7/22/11
Days For Project: 5 Day

Items to be checked upon receipt:

Completed By:_

Reviewed By:____

Cooler Temp: 5.3 Iced With: Ice			SS labels on correct samples received in		Yes No
6. Was COC included with	n samples?		ple IDs:	_	
7. Was COC signed and o	lated by client? Y	es Sub Lab:			
8. Does the COC match	the sample Y	es Analysis:			_
9. Is COC complete and	correct? Y	es TAT:			
18. Was there need to ca	ill project manager t				
18. Was there need to ca	444	o discuss status?	If yes, please expl	ain.	
18. Was there need to ca		o discuss status?	If yes, please expl	ain.	
18. Was there need to ca		o discuss status?	If yes, please expl	Preservative	
18. Was there need to ca Who was called?: Sample Number 1 2	Properly Preserved Yes Yes	By who Container Type 4 oz Soil Jar 4 oz Soil Jar	If yes, please expl	Preservative NP NP	
18. Was there need to ca Who was called?:	Properly Preserved Yes Yes Yes Yes	By who Container Type 4 oz Soil Jar 4 oz Soil Jar 4 oz Soil Jar	If yes, please expl	Preservative NP NP NP	
18. Was there need to ca Who was called?:	Properly Preserved Yes Yes Yes Yes Yes Yes	By who Container Type 4 oz Soil Jar	If yes, please expl	Preservative NP NP NP NP NP	
18. Was there need to ca Who was called?: Sample Number 1 2 3 4 5	Properly Preserved Yes Yes Yes Yes Yes Yes Yes Yes	By who Container Type 4 oz Soil Jar	If yes, please expl	Preservative NP NP NP	
18. Was there need to ca Who was called?:	Properly Preserved Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye	By who Container Type 4 oz Soil Jar	If yes, please expl	Preservative NP NP NP NP NP NP	
Who was called?:	Properly Preserved Yes Yes Yes Yes Yes Yes Yes Yes	By who Container Type 4 oz Soil Jar	If yes, please expl	Preservative NP NP NP NP NP NP NP NP NP	
18. Was there need to ca Who was called?:	Properly Preserved Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye	By who Container Type 4 oz Soil Jar	If yes, please expl	Preservative NP	
Who was called?:	Properly Preserved Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye	By who Container Type 4 oz Soil Jar	# of Containers 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Preservative NP	

Date/Time:_

CHAIN OF CUSTODY

Page_

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 ESS Laboratory www.esslaboratory.com

Format: Excel & Access __ PDF __ Other , Electronic Deliverable Reporting Limits Turn Time

A Standard
Other

If faster than 5 days, prior approval by laboratory is required # Other Orher Is this project for any of the following: MA-MCP Navy USACE State where samples were collected from:
MA (R) CT NH NJ NY ME

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Date/Time Preservation Code 1-NP, 2-HCl, 3-HsOs, 4-HNOs, 5-NaOH, 6-McOH, 7-Asorbic Acid, 8-ZnAct, 9-Received by: (Signature) Received by: (Signature) CYTARGE IS Date/Time 3540 Relinquished by: (Signature) 3 SEAN DRISCOLL 9082 15/11/1835 RB Date/Time Sampled by: Comments: Kevar spired by: (Signature) [] Technicians ___ Internal Use Only [] Pickup 7 1 1625 Till Date/Time No NA: 9 % N (*) 249 Ps Cooler Present Cooler Temp: Seals Intact

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

10/26/04 R 1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Date/Time

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

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Cooler Present	ent \rangle Yes	% %	Interna	Internal Use Only	<u>-</u>	eservation Code	Preservation Code 1- NP, 2- HC1, 3- H2SO4, 4- HNO3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8-	1, 3- H ₂ SO	4, 4- H	NO3,	5- NaC	Ή, 6-	MeOF	l, 7- As	sorbic A	cid, 8-	ZnAct, 9-	9			
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*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A
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Received by: (Signature)

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Date/Time

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Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

Dare/Time

Relinquished by: (Signature)

1,5/1/1625 Date/Time

PCB' 8082 W/

Comments:

[] Technicians __

Cooler Temp: 5, 3

3540 Extraction

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

10/28/04 R

Page 20 of 20



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1107259

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director

Digitally signed by Melissa Pagliarini Date: 2011.08.02 16:17:40 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107259

SAMPLE RECEIPT

The following samples were received on July 26, 2011 for the analyses specified on the enclosed Chain of Custody Record.

<u>Lab Number</u>	SampleName	<u>Matrix</u>	Analysis
1107259-01	SW-59	Soil	8082
1107259-02	VB-51	Soil	8082
1107259-03	VB-42A	Soil	8082
1107259-04	VB-43A	Soil	8082
1107259-05	VB-44A	Soil	8082
1107259-06	VB-46A	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107259

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1107259-03

Percent difference between primary and confirmation results exceeds 40% (P).

Aroclor 1260

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-59 Date Sampled: 07/26/11 15:10

Percent Solids: 86 Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107259 ESS Laboratory Sample ID: 1107259-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

8082 Polychlorinated Biphenyls (PCB)

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<u>Analyte</u>	Results (MRL)	Limit	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.224)	10	1	07/29/11 14:42	CG12825
Aroclor 1221	ND (0.224)	10	1	07/29/11 14:42	CG12825
Aroclor 1232	ND (0.224)	10	1	07/29/11 14:42	CG12825
Aroclor 1242	ND (0.224)	10	1	07/29/11 14:42	CG12825
Aroclor 1248	5.91 (1.12)	10	5	08/01/11 12:27	CG12825
Aroclor 1254	13.2 (1.12)	10	5	08/01/11 12:27	CG12825
Aroclor 1260	ND (0.224)	10	1	07/29/11 14:42	CG12825
Aroclor 1262	ND (0.224)	10	1	07/29/11 14:42	CG12825
Aroclor 1268	ND (0.224)	10	1	07/29/11 14:42	CG12825

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	<i>87 %</i>		30-150
Surrogate: Decachlorobiphenyl [2C]	80 %		30-150
Surrogate: Tetrachloro-m-xylene	100 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	97 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-51 Date Sampled: 07/26/11 15:15

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107259 ESS Laboratory Sample ID: 1107259-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

8082 Polychlorinated Biphenyls (PCB)

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Limits

Analyte Aroclor 1016	Results (MRL) ND (0.233)	Limit 10	<u>DF</u>	Analyzed Sequence 07/29/11 15:20	Batch CG12825
Aroclor 1221	ND (0.233)	10	1	07/29/11 15:20	CG12825
Aroclor 1232	ND (0.233)	10	1	07/29/11 15:20	CG12825
Aroclor 1242	ND (0.233)	10	1	07/29/11 15:20	CG12825
Aroclor 1248	3.13 (0.233)	10	1	07/29/11 15:20	CG12825
Aroclor 1254	7.56 (1.17)	10	5	08/01/11 13:03	CG12825
Aroclor 1260	ND (0.233)	10	1	07/29/11 15:20	CG12825
Aroclor 1262	ND (0.233)	10	1	07/29/11 15:20	CG12825
Aroclor 1268	ND (0.233)	10	1	07/29/11 15:20	CG12825

Oualifier

		£	20000
Surrogate: Decachlorobiphenyl	94 %		<i>30-150</i>
Surrogate: Decachiorobiphenyl [2C]	84 %		30-150
Surrogate: Tetrachloro-m-xylene	115 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	98 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-42A Date Sampled: 07/26/11 15:20

Percent Solids: 63 Initial Volume: 5.1 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1107259 ESS Laboratory Sample ID: 1107259-03

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES D	EC		
Analyte	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.311)	10	1	07/29/11 15:58	CG12825
Aroclor 1221	ND (0.311)	10	1	07/29/11 15:58	CG12825
Aroclor 1232	ND (0.311)	10	1	07/29/11 15:58	CG12825
Aroclor 1242	ND (0.311)	10	1	07/29/11 15:58	CG12825
Aroclor 1248	10.2 (1.56)	10	5	07/29/11 15:58	CG12825
Aroclor 1254	ND (0.311)	10	1	07/29/11 15:58	CG12825
Aroclor 1260	P 0.747 (0.311)	10	1	07/29/11 15:58	CG12825
Aroclor 1262	ND (0.311)	10	1	07/29/11 15:58	CG12825
Aroclor 1268	ND (0.311)	10	1	07/29/11 15:58	CG12825

Qualifier

Limits

Surrogate: Decachlorobiphenyl	84 %	30-150
Surrogate: Decachlorobiphenyl [2C]	83 %	30-150
Surrogate: Tetrachioro-m-xylene	73 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	97 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-43A Date Sampled: 07/26/11 15:25

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107259 ESS Laboratory Sample ID: 1107259-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

RI		D	EC	T)	E.C.
	_				

Analyte Aroclor 1016	Results (MRL) ND (0.233)	<u>Limit</u> 10	<u>DF</u>	<u>Analyzed</u> Sequence 07/29/11 16:35	Batch CG12825
Aroclor 1221	ND (0.233)	10	1	07/29/11 16:35	CG12825
Aroelor 1232	ND (0.233)	10	1	07/29/11 16:35	CG12825
Aroclor 1242	ND (0.233)	10	1	07/29/11 16:35	CG12825
Aroclor 1248	1.49 (0.233)	10	1	07/29/11 16:35	CG12825
Aroelor 1254	ND (0.233)	10	1	07/29/11 16:35	CG12825
Aroclor 1260	1.96 (0.233)	10	1	07/29/11 16:35	CG12825
Aroclor 1262	ND (0.233)	10	1	07/29/11 16:35	CG12825
Aroclor 1268	ND (0.233)	10	1	07/29/11 16:35	CG12825

	78RECOVELY	Quanner	LIIIII
Surrogate: Decachlorobiphenyl	93 %		30-150
Surrogate: Decachlorobiphenyl [2C]	92 %		30-150
Surrogate: Tetrachloro-m-xylene	81 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	93 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-44A Date Sampled: 07/26/11 15:30

Percent Solids: Initial Volume: 5.3 Final Volume: 10 Extraction Method: 3540

Aroclor 1268

ESS Laboratory Work Order: 1107259 ESS Laboratory Sample ID: 1107259-05

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

8082 Polychlorinated Biphenyls (PCB)

		RI - RES DE	C		
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	<u>Batch</u>
Aroclor 1016	ND (0.219)	10	1	07/29/11 17:13	CG12825
Aroclor 1221	ND (0.219)	10	1	07/29/11 17:13	CG12825
Aroclor 1232	ND (0.219)	10	1	07/29/11 17:13	CG12825
Aroclor 1242	ND (0.219)	10	1	07/29/11 17:13	CG12825
Aroclor 1248	ND (0.219)	10	1	07/29/11 17:13	CG12825
Aroclor 1254	0.508 (0.219)	10	1	07/29/11 17:13	CG12825
Aroclor 1260	ND (0.219)	10	1	07/29/11 17:13	CG12825
Aroclor 1262	ND (0.219)	10	1	07/29/11 17:13	CG12825

10

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	86 %		30-150
Surrogate: Decachlorobiphenyl [2C]	87 %		30-150
Surrogate: Tetrachloro-m-xylene	96 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	89 %		30-150

ND (0.219)

07/29/11 17:13

CG12825



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-46A Date Sampled: 07/26/11 15:35

Percent Solids: Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107259 ESS Laboratory Sample ID: 1107259-06

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.224)	<u>Limit</u> 10	$\underline{\mathbf{DF}}_{1}$	<u>Analyzed</u> <u>Sequence</u> 07/29/11 17:51	Batch CG12825
Aroclor 1221	ND (0.224)	10	1	07/29/11 17:51	CG12825
Aroclor 1232	ND (0.224)	10	1	07/29/11 17:51	CG12825
Aroclor 1242	ND (0.224)	10	1	07/29/11 17:51	CG12825
Aroclor 1248	0.790 (0.224)	10	1	07/29/11 17:51	CG12825
Aroclor 1254	1.06 (0.224)	10	1	07/29/11 17:51	CG12825
Aroclor 1260	ND (0.224)	10	1	07/29/11 17:51	CG12825
Aroclor 1262	ND (0.224)	10	1	07/29/11 17:51	CG12825
Aroclor 1268	ND (0.224)	10	1	07/29/11 17:51	CG12825

Oualifier

	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	· ·	21111112
Surrogate: Decachlorobiphenyl	<i>86</i> %		30-150
Surrogate: Decachlorobiphenyl [2C]	84 %		30-150
Surrogate: Tetrachloro-m-xylene	72 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	87 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107259

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD	0
,	* Sweet !					%KEC	Limits	RPD	Limit	Qualifier
		8082 Poly	chlorinated B	liphenyls	(PCB)					
Batch CG12825 - 3548	DENOTE: TOT									WALL.
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet		77700				*****	
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	. ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0219		mg/kg wet	0.02500		88	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0202		mg/kg wet	0.02500		81	30-150			
Surrogate: Tetrachloro-m-xylene	0.0198		mg/kg wet	0.02500		<i>79</i>	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0202		mg/kg wet	0.02500		81	30-150			
LCS	****		·						*******	*****
Aroclor 1016	0,455	0.0500	mg/kg wet	0.5000	***************************************	91	40-140		***************************************	
Aroclor 1260	0.485	0,0500	mg/kg wet	0.5000		97	40-140			
Surrogate: Decachlorobiphenyl	0.0236		mg/kg wet	0.02500		94	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0219		mg/kg wet	0.02500		88	30-150			
Surrogate: Tetrachloro-m-xylene	0.0217		mg/kg wet	0.02500		87	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0209		mg/kg wet	0.02500		84	30-150			
CS Dup					-		***	***************************************		
roclor 1016	0.452	0.0500	mg/kg wet	0.5000	***************************************	90	40-140	0.6	50	******
Aroclor 1260	0.473	0.0500	mg/kg wet	0.5000		95	40-140	2	50	
Surrogate: Decachlorobiphenyl	0.0227		mg/kg wet	0.02500	-	91	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0212		mg/kg wet	0.02500		85	30-150			
Surrogate: Tetrachloro-m-xylene	0.0206		mg/kg wet	0.02500		82	30-150			
Surrogate: Tetrachioro-m-xylene [2C]	0.0198		mg/kg wet	0.02500		79	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107259

Notes and Definitions

U	Analyte included in the analysis, but not detected
P	Percent difference between primary and confirmation results exceeds 40% (P).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107259

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Woodard & Curran
Client Project ID: ______
Shipped/Delivered Via: <u>Client</u>

ESS Project ID: 11070259
Date Project Due: 8/2/11
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:	<u> </u>	11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	-Ne
Cooler Temp: 1.3		16. Are ESS labels on correct containers?	YésiNo
Iced With: Ice		17. Were samples received intact?	(Yes)No
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	_
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	_
18. Was there need to call project manage	ger to discu	ss status? If yes, please explain.	
Who was called?:		By whom?	

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative	
1	Yes	4 oz Soil Jar	1	NP	
2	Yes	4 oz Soil Jar	1	NP	
3	Yes	4 oz Soil Jar	1	NP	
4	Yes	4 oz Soii Jar	1	NP	
5	Yes	4 oz Soil Jar	1	NP	
6	Yes	4 oz Soil Jar 🚐	1017.1	NP	
Completed By:		ate/Time://	1361/11		
Reviewed By:	.O D	ate/Time:	/ 		

Electronic Deliverable Reporting Limits CHAIN OF CUSTODY Turn Time X Standard Other Other If faster than 5 days, prior approval by laboratory is required # Other State where samples were collected from:

MA (RI) CT NH NJ NY ME

Is this project for any of the following:

MA-MCP Navy USACE Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 ESS Laboratory www.esslaboratory.com

Container Type: P-Poly G-Glass S-Sterile V-VOA | Marrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters PDF _ Other Preservation Code I-NR 2-HC1, 3-HsO., 4-HNO., 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-Write Required Analysis Format: Excel __ Access __ ಬ್ರಾಗಿ <u>×</u> <u>×</u> 7 J Type of Containers **J** Other Number of Containers Pres Code Sampled by: SEAN 'VRISKOLL Project Name (20 Char. or less) Safer Kleich Sample Identification (20 Char, or less) Email Address ัง Address CEDAL VB-46A 18-44A Zip **O2**903 VB-43A VB-42A 25-52 VB-SI 219303 401 273 5087 Internal Use Only __ No NA__ [] Pickup **W** V V S) S S MATRIX メ **水** CEVE COMP Fax# Stare Collection (328 538 Time 1530 1520 1515 010 WoodAND & CUREAS Cooler Temp: (2) X Yes 7/20/11 City Rovidence 7/26/11 7/26/11 7 26 10 7 26 11 7/20/11 40/273 1007 Contact Person Cooler Present Telephone # Sample # Seals Intact

*By circling MA-MCB, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

S191119011

"and here

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

7/22/11 | [US

Relinquished by: (Ngnatthre)

Date/Time

Comments:

[] Technicians__

Date/Time

PCB 8082 WITH 3540 EXTERCTION

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Page 14 of 14



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1107284

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director



Digitally signed by Melissa Pagliarini Date: 2011.08.03 09:51:37 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107284

SAMPLE RECEIPT

The following samples were received on July 27, 2011 for the analyses specified on the enclosed Chain of Custody Record.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	Analysis
1107284-01	VB-52	Soil	8082
1107284-02	VB-53	Soil	8082
1107284-03	VB-54	Soil	8082
1107284-04	VB-55	Soil	8082
1107284-05	SW-56A	Soil	8082
1107284-06	SW-57A	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107284

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters
Semivolatile Organics Internal Standard Information
Semivolatile Organics Surrogate Information
Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-52 Date Sampled: 07/27/11 08:40

Percent Solids: Initial Volume: 5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107284 ESS Laboratory Sample ID: 1107284-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

		R	I - RES DE	iC .		
<u>Analyte</u>	Results (MRL)		<u>Limit</u>	$\overline{\mathbf{DF}}$	Analyzed Sequence	Batch
Aroclor 1016	ND (0.225)		10	1	07/29/11 20:59	CG12825
Aroclor 1221	ND (0.225)		10	1	07/29/11 20:59	CG12825
Aroclor 1232	ND (0.225)		10	1	07/29/11 20:59	CG12825
Aroclor 1242	ND (0.225)		10	1	07/29/11 20:59	CG12825
Aroclor 1248	1.21 (0.225)		10	1	07/29/11 20:59	CG12825
Aroclor 1254	1.48 (0.225)		10	1	07/29/11 20:59	CG12825
Aroclor 1260	ND (0.225)		10	1	07/29/11 20:59	CG12825
Aroclor 1262	ND (0.225)		10	1	07/29/11 20:59	CG12825
Aroclor 1268	ND (0.225)		10	1	07/29/11 20:59	CG12825
	%Recovery	Qualifier	Limits			

Surrogate: Decachlorobiphenyl	<i>88 %</i>	30-150
Surrogate: Decachiorobiphenyl [2C]	<i>85 %</i>	30-150
Surrogate: Tetrachioro-m-xylene	83 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	90 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-53 Date Sampled: 07/27/11 09:00

Percent Solids: Initial Volume: 5.2 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107284 ESS Laboratory Sample ID: 1107284-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

RI	TO I	ES	\mathbf{r}	
T.I	- NI		UL	

		*** *****			
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.224)	10	1	07/29/11 21:37	CG12825
Aroclor 1221	ND (0.224)	10	1	07/29/11 21:37	CG12825
Aroclor 1232	ND (0.224)	10	1	07/29/11 21:37	CG12825
Aroclor 1242	ND (0.224)	10	1	07/29/11 21:37	CG12825
Aroclor 1248	ND (0.224)	10	1	07/29/11 21:37	CG12825
Aroclor 1254	0.233 (0.224)	10	1	07/29/11 21:37	CG12825
Aroclor 1260	ND (0.224)	10	1	07/29/11 21:37	CG12825
Aroclor 1262	ND (0.224)	10	1	07/29/11 21:37	CG12825
Aroclor 1268	ND (0.224)	10	1	07/29/11 21:37	CG12825

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	<i>90</i> %		30-150
Surrogate: Decachlorobiphenyl [2C]	88 %		30-150
Surrogate: Tetrachloro-m-xylene	89 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	94 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-54 Date Sampled: 07/27/11 10:55

Percent Solids: Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107284 ESS Laboratory Sample ID: 1107284-03

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

Analyte Arocior 1016	Results (MRL) ND (0.255)	Limit	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> <u>Sequence</u> 07/29/11 22:15	Batch CG12825
Aroclor 1221	ND (0.255)	10	1	07/29/11 22:15	CG12825
Aroclor 1232	ND (0.255)	10	1	07/29/11 22:15	CG12825
Aroclor 1242	ND (0.255)	10	1	07/29/11 22:15	CG12825
Aroclor 1248	4.07 (0.255)	10	1	07/29/11 22:15	CG12825
Aroclor 1254	ND (0.255)	10	1	07/29/11 22:15	CG12825
Aroclor 1260	0.493 (0.255)	10	1	07/29/11 22:15	CG12825
Aroclor 1262	ND (0.255)	10	1	07/29/11 22:15	CG12825
Aroclor 1268	ND (0.255)	10	1	07/29/11 22:15	CG12825

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	83 %		30-150
Surrogate: Decachlorobiphenyl [2C]	<i>98</i> %		30-150
Surrogate: Tetrachloro-m-xylene	67 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	<i>78</i> %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-55 Date Sampled: 07/27/11 11:00

Percent Solids:

Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107284 ESS Laboratory Sample ID: 1107284-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

Limits

Analyte Aroclor 1016	Results (MRL) ND (0.236)	Limit 10	$\mathbf{\underline{DF}}_{1}$	Analyzed Sequence	Batch CG12825
Aroclor 1221	ND (0.236)	10	1	07/29/11 22:52	CG12825
Aroclor 1232	` '	10	1	07/29/11 22:52	CG12825
Aroclor 1242	ND (0.236)	10	1	07/29/11 22:52	CG12825
Aroclor 1248	ND (0.236)	10	1	07/29/11 22:52	CG12825
Aroclor 1254	ND (0.236)	10	1	07/29/11 22:52	
Aroclor 1260	ND (0.236)	10	1	07/29/11 22:52	CG12825
Aroclor 1262	ND (0.236)	10	1		CG12825
Aroclor 1268	ND (0.236)		1	07/29/11 22:52	CG12825
Arocior 1208	ND (0.236)	10	1	07/29/11 22:52	CG12825

Qualifier

Surrogate: Decachlorobiphenyl	<i>89</i> %	30-150
Surrogate: Decachlorobiphenyl [2C]	90 %	30-150
Surrogate: Tetrachloro-m-xylene	<i>87</i> %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	82 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-56A Date Sampled: 07/27/11 11:05

Percent Solids: 9.3
Initial Volume: 5.3
Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107284 ESS Laboratory Sample ID: 1107284-05

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

		RI - RES DEC							
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch				
Aroclor 1016	ND (0.201)	10	1	07/29/11 23:30	CG12825				
Aroclor 1221	ND (0.201)	10	1	07/29/11 23:30	CG12825				
Aroclor 1232	ND (0.201)	10	1	07/29/11 23:30	CG12825				
Aroclor 1242	ND (0.201)	10	1	07/29/11 23:30	CG12825				
Arocler 1248	1.84 (0.201)	10	1	07/29/11 23:30	CG12825				
Aroclor 1254	2.62 (0.201)	10	1	07/29/11 23:30	CG12825				

Arocler 1248	1.84 (0.201)		10	1	07/29/11 23:30	CG12825
Aroclor 1254	2.62 (0.201)		10	1	07/29/11 23:30	CG12825
Aroclor 1260	ND (0.201)		10	1	07/29/11 23:30	CG12825
Aroclor 1262	ND (0.201)		10	1	07/29/11 23:30	CG12825
Aroclor 1268	ND (0.201)		10	1	07/29/11 23:30	CG12825
	%Recovery	Qualifier	Limits			***************************************

Surrogate: Decachlorobiphenyl	90 %	30-150
Surrogate: Decachlorobiphenyl [2C]	92 %	30-150
Surrogate: Tetrachloro-m-xylene	125 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	89 %	30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-57A Date Sampled: 07/27/11 11:10

Date Sampled: 07/27/11 11:19 Percent Solids: 87

Initial Volume: 5.1 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1107284 ESS Laboratory Sample ID: 1107284-06

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 7/28/11 19:00

8082 Polychlorinated Biphenyls (PCB)

The		TOTAL	\mathbf{DEC}
RI	-	$\mathbf{R} + \mathbf{N}$	1551.6

Limits

Analyte Aroclor 1016	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Atociol 1010	ND (0.225)	10	1	07/30/11 0:08	CG12825
Aroclor 1221	ND (0.225)	10	1	07/30/11 0:08	CG12825
Aroclor 1232	ND (0.225)	10	1	07/30/11 0:08	CG12825
Aroclor 1242	ND (0.225)	10	1	07/30/11 0:08	CG12825
Aroclor 1248	ND (0.225)	10	1	07/30/11 0:08	CG12825
Aroclor 1254	ND (0.225)	10	1	07/30/11 0:08	CG12825
Aroclor 1260	ND (0.225)	10.	1	07/30/11 0:08	CG12825
Aroclor 1262	ND (0.225)	10	1	07/30/11 0:08	CG12825
Aroclor 1268	ND (0.225)	10	1	07/30/11 0:08	CG12825

Qualifler

Surrogate: Decachlorobiphenyl	<i>85</i> %	30-150
Surrogate: Decachlorobiphenyl [2C]	<i>83</i> %	30-150
Surrogate: Tetrachloro-m-xylene	114 %	30-150
Surrogate: Tetrachioro-m-xylene [2C]	93 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107284

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
		8082 Polyo	chlorinated B	iphenyls	(PCB)					
Batch CG12825 - 3540			*****	***************************************	***************************************				*****	1001
Blank		. , , , , , , , , , , , , , , , , , , ,		*****						
Arocior 1016	ND	0,0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND .	0.0500	mg/kg wet							
Arocior 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0,0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0219		mg/kg wet	0.02500		88	30-150			
Surrogate: Decachiorobiphenyl [2C]	0.0202		mg/kg wet	0.02500		81	30-150			
Surrogate: Tetrachloro-m-xylene	0,0198		mg/kg wet	0.02500		<i>79</i>	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0202		mg/kg wet	0.02500		81	30-150			
LCS					***************************************				M. 1881	
Aroclor 1016	0,455	0.0500	mg/kg wet	0.5000		91	40-140			
Aroclor 1260	0.485	0.0500	mg/kg wet	0.5000		97	40-140			
Surrogate: Decachlorobiphenyl	0.0236		mg/kg wet	0.02500		94	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0219		mg/kg wet	0.02500		88	30-150			
Surrogate: Tetrachioro-m-xylene	0.0217		mg/kg wet	0.02500		87	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0209		mg/kg wet	0.02500		84	30-150			
LCS Dup									***************************************	
Aroclor 1016	0.452	0.0500	mg/kg wet	0.5000		90	40-140	0.6	50	
Aroclor 1260	0.473	0.0500	mg/kg wet	0.5000		95	40-140	2	50	
Surrogate: Decachlorobiphenyl	0.0227		mg/kg wet	0.02500		91	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0212		mg/kg wet	0.02500		85	30-150			
Surrogate: Tetrachloro-m-xylene	0.0206		mg/kg wet	0.02500		82	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0198		mg/kg wet	0.02500		79	30-150			
Matrix Spike Source: 1107284-06	~~~								~~ <u>~~~</u>	
Aroclor 1016	2,34	0,225	mg/kg dry	2,254	ND	104	40-140			
Aroclor 1260	2.06	0.225	mg/kg dry	2.254	ND	91	40-140			
Surrogate: Decachlorobiphenyl	0,0979		mg/kg dry	0.1127	W1111	87	30-150			
Surrogate: Decachiorobiphenyi Surrogate: Decachiorobiphenyi [2C]	0.0964		mg/kg dry	0.1127		86	30-150			
Surrogate: Decachiorosiphenyl [26] Surrogate: Tetrachioro-m-xylene	0.137		mg/kg dry	0.1127		121	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.107		mg/kg dry	0.1127		95	30-150			
Matrix Spike Dup Source: 1107284-06			D. 10 (
Aroclor 1016	2.36	0.230	malka dar	2 200	NID.	102	40_140	4		****
Arocior 1260	2.36	0.230	mg/kg dry mg/kg dry	2.299 2.299	ND ND	103 91	40-140 40-140	1 2	50 50	
0	0.0986			0.1140		05	20, 150			
Surrogate: Decachlorobiphenyl	0.0988		mg/kg dry mg/kg dry	0.1149		86 ea	30-150 20.150			
Surrogate: Decachlorobiphenyl [2C]			mg/kg dry	0.1149		84	30-150			
Surrogate: Tetrachloro-m-xylene	0.138		mg/kg dry	0.1149		120	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107284

Quality Control Data

Analyte	Result	MRL U		ike Source vel Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)									
Batch CG12825 - 3540	THE THE STATE OF T								
Surrogate: Tetrachloro-m-xylene [2C]	0.106	mg/	kg dry 0.1	149	93	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107284

Notes and Definitions

\mathbf{U}	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1107284

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141 Lead Paint, Lead in Children's Metals Jewelry http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

•			
Client: Woodard & Curr	an	ESS Project ID:	11070284
Client Project ID:		Date Project Due:	8/3/11
Shipped/Delivered Via:	ESS Courier	Days For Project:	

Items to be checked upon receipt:

to be checked upon receipt.			
1. Air Bill Manifest Present?	* No	10. Are the samples proper	ly preserved: Yes
Air No.:		11. Proper sample containe	
2. Were Custody Seals Present?	No	12. Any air bubbles in the V	
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded	
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volum	
5. Is a cooler present?	Yes	15. Any Subcontracting nee	
Cooler Temp: 2.0		16. Are ESS labels on correct	
Iced With: Icepacks		17. Were samples received	
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	V	
8. Does the COC match the sample		Sub Lab:	
•	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	
18. Was there need to call project manage	ger to discus	ss status? If yes, please expl	ain.
Who was called?:		By whom?	
Sample Number Properly Preser	ved Conta	ner Type # of Containers	Preservative
1 Yes		Soil Jar 1	NP
2 Yes 3 Yes		Soil Jar 1	NP
3 Yes 4 Yes		Soil Jar 1	NP
5 Yes		Soil Jar 1 Soil Jar 1	NP ND
6 Yes		Soil Jar a1 a1 1	NP NP
Completed By:	. 74 0	·····································	LÆL.
CONTRICTED DA 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Date/Time	a. //) // /	

Date/Time

Received by: (Signature)

Dare/Time

Relinquished by: (Signature)

1/27/11 1830

(Signature)

Received by

(queshed by (Signature)

Cooler Temp: 2.0

OKTRACTION

88 8540

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8082

Comments: RB's

] Technicians __

Date/Time

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Date/Time

(seceived by: (Signafare)

Date/Time

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AIN O
NIAIN
AIN O

Electronic Deliverable

Other

Reporting Limits

Turn Time

K Standard

Cother

Gays, prior approval by laboratory is required # State where samples were collected from:

MA CT NH NJ NY ME Is this project for any of the following: Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486 ESS Laboratory www.esslaboratory.com

	,			MA-MCP	Y Navy	USACE	Other	er		<u></u>	Format: Excel	Exce]	Access	PDF_	Other	T.	
Co. Name	و			Project #	Project Name (20 Cha. or less)	or less)		_				≱	ite Reg	Write Required Analysis	nalvsis			
3	Moodard & Charas	הפושה		219303	Mer	Kleen				\vdash	L		ŀ		\ -	-		}
Contact Person	FAVE C DONN	Z		Address CEORE	な			S.		······	**							
ू फु	マツ	State RT		Zip 62903	ŀ				cB,				****					
Telephone #	** 178 Sec. 1	Fax#	401 - 273	N)	Email Address		ĺ											
ESS LAB Sample #	Date	Collection Time	COMP		Sample Identification (30 Cha. or las)		Pres Code	Mumber Type of	.808		**************************************				_			
Ō	11/22/11	840	SX	1 VB-52				2	×		<u> </u>		┡		-	-		-
B	1/22/1	900	义 义	S VB-53				1 6	×									ļ <u>.</u>
G G	11/27/	105 5	× S	3 VB-54		÷		7 7	×									
0,7	1/27/1	1/80	X S	VB-55			-	7	×									_
05	1121	1105	×	4 .				7	×							-		
90	7 2 11	1110	X				مبر	1 4	*									
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Container Type:	Type: P-Poly G-Gl	lass S-Sterile V	-VOA Matt	P-Poly G-Glass S-Sterile V-VOA Marrix: S-Soil SD-Solid	D-Sludge WW-Waste Water GW-Ground Water	Water GW-0	Grounk	f Ware	S-MS	SW-Surface Water		DW-E	rinking	DW-Drinking Water		O-Oil W-Wipes	4	F-Filters
Cooler Present	X Yes	No.	Internal 1	Internal Use Only Pre	Preservation Code 1-NP, 2-HC1, 3-HSO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-	- HC1, 3- Hs	SO4, 4	HNO	s, 5- Na	OH, 6	MeO	I, 7. A	sorbic A	Acid, 8-	ZnAct,	9-		
Seals Intact	. Yes	No NA:	[] Pickup		Sampled by: Serve	JERN Hrscar	3											
•	-			_	:													

*By circling MA-MCB, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

inquished by: (Signature)

		·



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1108081

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

IABO XAPIL ANT

Digitally signed by Laurel Stoddard Date: 2011.08.16 14:19:20 -04'00'

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1108081

SAMPLE RECEIPT

The following samples were received on August 05, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Revision 1 August 16, 2011: Client Sample IDs for 1108081-03 and -04 have been revised.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1108081-01	VB-42B	Soil	8082
1108081-02	VB-51A	Soil	8082
1108081-03	SW-59A	Soil	8082
1108081-04	SW-59B	Soil	8082



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1108081

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1108081-01

Percent difference between primary and confirmation results exceeds 40% (P).

Aroclor 1254

1108081-01

Surrogate recovery(ies) above upper control limit (S+).

Tetrachloro-m-xylene [2C] (151% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-42B Date Sampled: 08/05/11 10:35

Percent Solids: Initial Volume: 20 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1108081 ESS Laboratory Sample ID: 1108081-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 8/8/11 18:00

			RI - RES D	EC		
<u>Analyte</u>	Results (MRL)		<u>Limit</u>	<u>DF</u>	Analyzed Sequence	Batch
Aroclor 1016	ND (0.0658)		10	1	08/09/11 18:05	CH10819
Aroclor 1221	ND (0.0658)		10	1	08/09/11 18:05	CH10819
Aroclor 1232	ND (0.0658)		10	1	08/09/11 18:05	CH10819
Aroclor 1242	ND (0.0658)		10	1	08/09/11 18:05	CH10819
Areclor 1248	7.75 (0.658)		10	10	08/10/11 11:30	CH10819
Aroclor 1254	P 3.20 (0.658)		10	10	08/10/11 11:30	CH10819
Aroclor 1260	ND (0.0658)		10	1	08/09/11 18:05	CH10819
Aroclor 1262	ND (0.0658)		10	1	08/09/11 18:05	CH10819
Aroclor 1268	ND (0.0658)		10	1	08/09/11 18:05	CH10819
-	%Recovery	Qualifier	Limits			
Commenter Describer of the Comment						

	, and a second second	Quom/u	Dinio
Surrogate: Decachlorobiphenyl	103 %		30-150
Surrogate: Decachlorobiphenyl [2C]	106 %		<i>30-150</i>
Surrogate: Tetrachloro-m-xylene	81 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	151 %	<i>S</i> +	20-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: VB-51A Date Sampled: 08/05/11 10:40

Percent Solids: Initial Volume: 20 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1108081 ESS Laboratory Sample ID: 1108081-02

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 8/8/11 18:00

RI	_	R	F۶	DEC	١

Analyte Aroclor 1016	Results (MRL) ND (0.0602)	Limit 10	<u>DF</u>	<u>Analyzed</u> <u>Sequence</u> 08/09/11 18:43	<u>Batch</u> CH10819
Aroclor 1221	ND (0.0602)	10	1	08/09/11 18:43	CH10819
Aroclor 1232	ND (0.0602)	10	1	08/09/11 18:43	CH10819
Aroclor 1242	ND (0.0602)	10	1	08/09/11 18:43	CH10819
Aroclor 1248	ND (0.0602)	10	1	08/09/11 18:43	CH10819
Aroclor 1254	1.03 (0.0602)	10	1	08/09/11 18:43	CH10819
Aroclor 1260	ND (0.0602)	10	1	08/09/11 18:43	CH10819
Aroclor 1262	ND (0.0602)	10	1	08/09/11 18:43	CH10819
Aroclor 1268	ND (0.0602)	10	1	08/09/11 18:43	CH10819

	%Recovery	Quaimer	Limits
Surrogate: Decachlorobiphenyl	111 %		30-150
Surrogate: Decachlorobiphenyl [ZC]	127 %		30-150
Surrogate: Tetrachloro-m-xylene	70 %		30-150
Surrogate: Tetrachioro-m-xylene [2C]	134 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



REVISED2:18 pm, Aug 16, 2011

CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SW-59A Date Sampled: 08/05/11 10:45

Percent Solids: 97 Initial Volume: 20 Final Volume: 10 Extraction Method: 3540 ESS Laboratory Work Order: 1108081

ESS Laboratory Sample ID: 1108081-03

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 8/8/11 18:00

8082 Polychlorinated Biphenyls (PCB)

RI -	RES	DEC

Limits

		ICI ACCOUNT	10		
Analyte Aroclor 1016	Results (MRL) ND (0.0515)	<u>Limit</u> 10	<u>DF</u> 1	Analyzed Sequence 08/09/11 19:21	Batch CH10819
Aroclor 1221	ND (0.0515)	10	1	08/09/11 19:21	CH10819
Aroclor 1232	ND (0.0515)	10	1	08/09/11 19:21	CH10819
Aroclor 1242	ND (0.0515)	10	1	08/09/11 19:21	CH10819
Aroclor 1248	ND (0.0515)	10	1	08/09/11 19:21	CH10819
Aroclor 1254	0.556 (0.0515)	10	1	08/09/11 19:21	CH10819
Aroclor 1260	ND (0.0515)	10	1	08/09/11 19:21	CH10819
Aroclor 1262	ND (0.0515)	10	1	08/09/11 19:21	CH10819
Aroclor 1268	ND (0.0515)	10	1	08/09/11 19:21	CH10819

Qualifier

	•	
Surrogate: Decachlorobiphenyl	97 %	30-150
Surrogate: Decachiorobiphenyl [2C]	93 %	30-150
Surrogate: Tetrachioro-m-xylene	105 %	30-150
Surrogate: Tetrachloro-m-xylene [2C]	100 %	30-150

%Recovery



The Microbiology Division of Thielsch Engineering, Inc.



REVISED

2:19 pm, Aug 16, 2011

ESS Laboratory Work Order: 1108081

ESS Laboratory Sample ID: 1108081-04

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 8/8/11 18:00

CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Client Sample ID: SW-59B Date Sampled: 08/05/11 10:50

Percent Solids: Initial Volume: 20 Final Volume: 10

Extraction Method: 3540

RI -	RES	DEC
XLI		

		KI - KLO D			
Analyte Aroclor 1016	Results (MRL) ND (0.0543)	Limit 10	<u>DF</u>	<u>Analyzed</u> Sequence 08/09/11 19:58	Batch CH10819
Aroclor 1221	ND (0.0543)	10	1	08/09/11 19:58	CH10819
Aroclor 1232	ND (0.0543)	10	1	08/09/11 19:58	CH10819
Aroclor 1242	ND (0.0543)	10	1	08/09/11 19:58	CH10819
Aroclor 1248	ND (0.0543)	10	1	08/09/11 19:58	CH10819
Aroclor 1254	0.537 (0.0543)	10	1	08/09/11 19:58	CH10819
Aroclor 1260	ND (0.0543)	10	1	08/09/11 19:58	CH10819
Aroclor 1262	ND (0.0543)	10	1	08/09/11 19:58	CH10819
Aroclor 1268	ND (0.0543)	10	1	08/09/11 19:58	CH10819

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	95 %		30-150
Surrogate: Decachlorobiphenyl [2C]	92 %		30-150
Surrogate: Tetrachloro-m-xylene	103 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	96 %		30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1108081

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

THE PROPERTY OF THE PROPERTY O									
Batch CH10819 - 3540									
Blank									
Arodor 1016	ND	0.0500	mg/kg wet						
Aroclor 1221	ND	0.0500	mg/kg wet						
Aroclor 1232	ND	0.0500	mg/kg wet						
Aroclor 1242	ND	0.0500	mg/kg wet						
Aroclor 1248	ND	0.0500	mg/kg wet						
Aroclor 1254	ND	0.0500	mg/kg wet						
Aroclor 1260	ND	0.0500	mg/kg wet						
Aroclor 1262	ND	0.0500	mg/kg wet						
Aroclor 1268	ND	0.0500	mg/kg wet						
Surrogate: Decachlorobiphenyl	0.0221		mg/kg wet	0.02500	88	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0205		mg/kg wet	0.02500	82	30-150			
Surrogate: Tetrachloro-m-xylene	0.0204		mg/kg wet	0.02500	82	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0,0209		mg/kg wet	0.02500	83	30-150			
LCS									
Aroclor 1016	0.482	0.0500	mg/kg wet	0,5000	96	40-140			
Aroclor 1260	0.492	0.0500	mg/kg wet	0.5000	98	40-140			
Surrogate: Decachlorobiphenyl	0.0233		mg/kg wet	0.02500	93	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0218		mg/kg wet	0.02500	<i>87</i>	30-150			
Surrogate: Tetrachioro-m-xylene	0.0223		mg/kg wet	0.02500	89	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0213		mg/kg wet	0.02500	<i>85</i>	30-150			
LCS Dup				- Firman	V W				
Aroclor 1016	0.511	0.0500	mg/kg wet	0.5000	102	40-140	6	50	
Aroclor 1260	0.512	0,0500	mg/kg wet	0.5000	102	40-140	4	50	
Surrogate: Decachlorobiphenyl	0.0242		mg/kg wet	0.02500	97	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0227		mg/kg wet	0.02500	91	30-150			
Surrogate: Tetrachloro-m-xylene	0.0251		mg/kg wet	0.02500	101	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0243		mg/kg wet	0.02500	97	30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston

ESS Laboratory Work Order: 1108081

Notes and Definitions

\mathbf{U}	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
P	Percent difference between primary and confirmation results exceeds 40% (P).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
Ş	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1108081

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.nud.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Woodard & Curran Client Project ID: Shipped/Delivered Via:

Client

Yes

ESS Project ID: <u>11080081</u> Date Project Due: 8/12/11 Days For Project: 5 Day

Items to be checked upon receipt:

Completed By:

Reviewed By:_

1. Air Bill Manifest Preser	it? <u>*</u>	No	10. Are th	e samples proper	ly preserved?	Yes
Air No.:			11. Proper	sample containe	rs used?	Yes
2. Were Custody Seals Pr	esent?	10	12. Any ai	r bubbles in the V	OA vials?	N/A
3. Were Custody Seals In	tact?	/A	13. Holdin	g times exceeded	?	No
4. Is Radiation count < 1	00 CPM? Y	es	14. Suffici	ent sample volum	ies?	Yes
5. Is a cooler present?	Y	es	15. Any S	ubcontracting nee	ded?	No
Cooler Temp: 3.1			16. Are ES	S labels on corre	ct containers? (Yes No
Iced With: Icepacks			17. Were	samples received	intact?	Yes No
6. Was COC included with	samples? Y	es	ESS Samp	le IDs:		
7. Was COC signed and d	ated by client? Y	es	Sub Lab:			· _
8. Does the COC match	the sample Y	es	Analysis:			
9. Is COC complete and c	orrect?	es	TAT:			
18. Was there need to ca	li project manager t	o discus	s status?]	f yes, please exp	ain.	
Who was called?:				m?		
Sample Number			ner Type	# of Containers		
1 2	Yes Yes		ioil Jar ioil Jar	1	NP NP	
3	Yes		ioil Jar	i	NP	

4 oz Soil Jar

Date/Time:

Date/Time:_

NP

CHAIN OF CUSTODY	Turn Time Standard Other Reporting Limits ESS LA	State where samples were collected from:	Is this project for any of the following: Other Electronic Deliverable Yes No	MA-MCP Navy IISACE Other Format: Excel Access PDF Other
ESS Laboratory	Division of I nielsch Engineering, Inc. 185 Frances Avenue Cranston RI 02010, 2211	Tel. (401) 461-7181 Fax (401) 461-4486	www.esslaboratory.com	

C. Name			ľ	TATULATION		USACE	Ct. Other		1 Olinat.	יי דאַרכּו	Access	FDF	Other	
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ESS LAB Sample #	Date	Collection Time	GRAB MATRIX	Sample	ple Identification (20 Char. or less)	ar or loss)	Pres Code Number	Type of C		·			_	<u></u>
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Container Type:	Pype: P-Poly G-Glass		S-Sterile V-VOA Matrix: S-Soil	S-Soil SD-Solid	D-Sludge WW-Waste Water	Waste Water G	GW-Ground Water SW-Surface Water DW-Drinking Water	ter SW-S	ırface Water	DW-Drir	ıking Water	O-Oil	W-Wipes	F-Filters
Cooler Present	ent Yes	No M	Internal Use Only	1	Preservation Code 1- NP, 2- HC1, 3- H.SO., 4- HNO., 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9-	NP, 2- HC1, 3	- H ₂ SO ₄ , 4- HN	O3, 5- Na	JH, 6- Me()H, 7- Asor	bic Acid, 8-	ZnAct, 9-		
Seals Intact	Yes	No NA:	. [] Pickup	l	Sampled by: SER	SEAN DRISCOLL	7							•
Cooler Temp:	7		[] Technicians		Comments: PCB	5808	Want 35	3540 EX	EXTRACTION					
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*By circling MA-MCB, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt



APPENDIX C: WASTE SHIPMENT RECORDS



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Driver's Signatu√

405WM-Gonic

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NONHAZARDOUS WASTE MANIFEST (2)



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	Generator's Name and Mailing Address		* Q A * D *	2 2 1 3	<u> </u>		nhazardous Waste M	enifest Do	cument Number
ı,	Safety-Alsen Systems, I)	10		•			SA 033	7 O	70
l	157 Mill Street Cranston, RI 02905					B. G.	S.I. (Gen. Site Add	ress)	4 .
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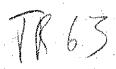
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SOLID WOSTE TROUSPORTER DECLARATION: I certify under panalty of perjory that the information provided is true and consect to the best of my knowledge and belief. TO THE BEST OF MY KNOWLEDGE THIS TRUCK/CONTAINS NO HAZARDOUS OR UNACCEPTABLE WASTE.

Driver's Signature 405WM-Gonic

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NONHAZARDOUS WASTE MANIFEST



1	Please type (or print)	1. Generator's US El	PAID No. N. , Doc	/anifest ument No.	2. Pag	ge 1		
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	3. Generator's Name and Mailing Address					nažardous Waste Mar		
	Safety-Kleen Systems, I 167 Mill Street	.IIC .			nig	A 033	1.1	(3
	Cranston, RI 02905				B. G.S	.i. (Gen. Site Addr	ess)	
	4. Generator's Phone (4 13) The same	08			Bat.	ety-Kleen	Syste	ms, Inc
	5. Transporter 1 Company Name		6. US EPA ID Number	•		Mill Spre		
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-	7. Transporter 2 Company Name		8. US EPA ID Number		1	i. (Trans. Lic. Plate		
						n. Phone (200		3-6745
ŀ	9. Designated Facility Name and Site Address WASTE MANAGEMENT OF NH	一地萨拉斯	10. US EPA ID Number			I. (Trans. Lic. Plate		
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;	ROCHESTER, NH 03839	. 1	the second secon		1			
			M.O.A. B.S.O.A.I	12. Conta		ility's Phone 603		385
	11. US DOT Description (Including Proper Shipp	ing Name, Hazard Cla	ss and ID Number)	No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
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	15. Special Handling Instructions and Additional Info EMERGENCY EH#(203)238-6745	d. ormation a) F050311	Poir	t of Departur	b. GUIDI			NH)
	b: 15. Special Handling Instructions and Additional Info EMERGENCY EH#(203)238-6745 16. GENERATOR'S CERTIFICATION: I hereby de	d. mation a) F050311	Poins of this consignment are fully an	it of Departured	b. GUIDI	ed above by		NH)
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	b: 15. Special Handling Instructions and Additional Info EMERGENCY EH#(203) 238 – 674 5 16. GENERATOR'S CERTIFICATION: I hereby de proper shipping name and are classified, pack according to applicable international and nation	d. ormation a) R050311	Poins of this consignment are fully and are in all respects in propertions, and all applicable State la	nt of Departured accurately per condition	b. 6-01 Di e: describe	ed above by		
	b: 15. Special Handling Instructions and Additional Info EMERGENCY EH#(203) 238 – 674 5 16. GENERATOR'S CERTIFICATION: I hereby de proper shipping name and are classified, pack according to applicable international and nation Printed/Typed Name	d. ormation a) R050311	Poir s of this consignment are fully ar sd, and are in all respects in prop	nt of Departured accurately per condition	b. 6-01 Di e: describe	ed above by		Month Day Year
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ARRIVED DATE	PROFILE NUMBER	NET WEIGHT (LBS)	MANIFEST #	RECEIPT #
06/10/11	NY302531 NY302531	27680.00 21860.00	000208917UIS 000208919UIS	081645407 081645408
	TOTAL	49540.00		
06/21/11	NY302531	35520.00	000206515UIS	081645573
	TOTAL	35520.00		
06/24/11	NY302531	25840.00	000206581UIS	081645667
	TOTAL	25840.00		
08/04/11	NY302531	24260.00	000206970UIS	081646338
	TOTAL	24260.00		
08/09/11	NY302531	34420.00	008931019JJK	081646446
	TOTAL	34420.00		
	TOTAL	169580.00		

* * * END OF REPORT * * *

Ple	ase p	rint or type. (Form designed for use on elite (12-pitch) typewriter.)						Forn	n Approved. O	MB No. 2050	-0039
		FORM HAZARDOUS 1. Generator ID Number P. ID 984 802 842	2. Page 1 of 1	3. Emergency (203)	/ Response (2 2 8 - 51		4. Manifest 00		umber 18917	' UIS)
	5. G	enerator's Name and Mailing Address Jufety-Kleen Jystems, Inc. 167 Mill Street		3af et 157 F	y-Kle Lill 3:	en Sys breet	en mailing addres items, In				
	Gen	Cranston, RI 02905 erator's Phone: 401 781-0308		Crans	រាងបង្គរ	KI UZS	193				
	â. Ti	ansporter 1 Company Name					U.S. EPA ID N		5000		
Ш	L	UNITED INDUSTRIAL SERVICES ansporter 2 Company Name					U.S. EPA IO N	002181	10003		
Ш	'- ''	ansporter 2 Company Mane					1	iuji (oci			
П	8. D	esignated Facility Name and Site Address					U.S. EPA ID N	lumber			
Ш		CWM Chemical Services, bLC 1550 Blamer Road	÷				NYI	004980	86679		
Ш	<u> </u>	Model City, NY 14107					1				
П	 	ility's Phone: 716 7548231 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number,			10. Containe	ers	11, Total	12. Unit	<u> </u>		
	9a. HM	10.11			No.	Туре	Quantity	Wt./Vol.	13, Wa	ste Codes	
GENERATOR	×	UN3432, POLYCHLORINATED BIPHENYLS, JOLII 9, FG II, RQ	TKIM ,O	URE,	903	СМ	19000	К	R007		
- GENE		2.									
	-	3.							:	:	
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		4.									
	14.	Special Handling Instructions and Additional Information						W 1 3 /	12571	911	
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	E	MERGENCY EH#(203) 238-6745			1.	-0	سيسو بدو	Co K	,		ı
	15.	GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this									
		marked and labeled/placarded, and are in all respects in proper condition for transport acceeding that the contents of this consignment conform to the terms of the attached I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large	d EPA Acknowl	edgment of Co	nsent.	•	-	If export sh	ipment and I am	the Primary	
	Gene	erator's/Offeror's Printed Typed Name	Sign	nature		Z			Month	Day Ye	ear
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SS	Trans	sporter 2 Printed/Typed Name	Şigr	nature				£ Z	Month	Day Ye	ear
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ر ح	<u>a</u>	T. ISC. GLALVALO REBUILD Alternate Facility (or Generate)	/ occur	Manifest	Reference N	lumber:	U.S. EPA ID N	ımher			
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F		ty's Phone:					<u> </u>				
DESIGNATED FACILITY	18c. :	Signature of Allemate Facility (or Generator)							Month	Day Y	/ear
SiG		azardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment	··	and recycling	systems)		1.				\Box
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	20. D	esignated Facility Owner or Operator: Certification of receipt of hazardous materials covered	d by the manife	est except as no	ted in Item 1	8a		· · · · · · · · · · · · · · · · · · ·			_
	Printe	dityped Name ELEBN CARTON	Sign I	ature	, Onl	7 1	Car	Por	Month	Day Ye	ear_
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1550 Balmer Road Model City, NY 14107 (716) 286-1550 (716) 286-0211 Fax

SAFETY-KLEEN SYSTEMS INC ATTN: ENVIRONMENTAL COMPLIANCE DEPT. RID084840282 167 MILL ST CRANSTON RI 02905

CERTIFICATE OF DISPOSAL

CWM CHEMICAL SERVICES, L.L.C., EPA ID: NYD049836679, has received waste material from SAFETY-KLEEN SYSTEMS INC on 06/10/11 as described on Shipping Document number 000208917UIS Sequence number 01. CWM CHEMICAL SERVICES, L.L.C. hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: NY302531 CWM Tracking ID: 8164540701

CWM Unit #: 1*0 Disposal Date: 06/10/11

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

DISTRICT MANAGER Certificate # 346253

06/13/11

For questions please call our Customer Service Dept. at (800) 843-3604

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1		IFORM HAZARDOUS 1. Generator ID Number NASTE MANIFEST R.CDQ8 1 302			3. Emergency Respo		4. Manife	st Tracking	rm Approved. OMB No. 2050 Number
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	3. 0	enerator's Name and Mailing Address 3 a E = ty - Kle = n 3ys tems, I:	712 T		Generator's Site Addr	ess (if differen	t than mailing add	ress)	
П		167 Mill Street	**····		167 Hill	Lean I	ystems,	Ins.	
П	ĺ.,	Cranston, RI 02905			Cranston				
П		erator's Phone: 401 781-0308 ensporter 1 Company Name							
	"	UNITED INDUSTRIAL SERVI	್ ರಾ				U.S. EPA I	Number	· · · · · · · · · · · · · · · · · · ·
	7. 16	ansporter 2 Company Name	~ L.D				C,	TD0218	16889
		a sampling manne					U.S. EPA IC	Number 1	
	8. De	esignated Facility Name and Site Address						····	
		CWM Chemical Services,	LLC				U.S. EPA IC	Number	
		1550 Blamer Road					N	YD0498	35579
	Facili	Model City, NY 14107 HysPhone: 716 7548231					i		
	ga.	9b. U.S. DOT Description (including Proper Shipping Nam	a Varant Ciana IO Number				<u> </u>		
	HM	and Packing Group (if any))	o, nazaro Giass, ID Number,		10. Con		11. Total	12. Unit	13. Waste Codes
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GENERATOR	Ж	UN3432, FOLYCHLORINATED BI 9, FG II, RQ	PHENYLS, BOLII	O, MIRTU	RE, O	т см	19000	к	R007
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\prod	14. Sp	ecial Handling Instructions and Additional Information				<u> </u>	<u> </u>	NY 3	
	5. G m E:	ERGENCY PH#(203) 238-6745 ENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declarated and labeled/placarded, and are in all respects in proper xporter, I certify that the contents of this consignment conformation of the conformat	to the terms of the attached	onsignment are ding to applicabl EPA Acknowledg quantity generat	fully and abcurately de e international and nat iment of Consent. or) or (b) (if) am a sma	ionai governm	by the proper shi ental regulations.	ipping name, If export ship	and are classified, packaged, ment and I am the Primary
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		<u> </u>		1 (1	U				Month Day Year
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		r itons. Pature of Alternate Facility (or Generator)							
	-	• • • • • • • • • • • • • • • • • • • •							Month Day Year
19.	Hazar	rdous Waste Report Management Method Codes (i.e., codes	for hazardous waste tra-t-	t dian t		·			
1.		2.	or nazarovos waste treatmen	t, disposal, and	ecycling systems)				
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	Design	nated Facility Owner or Operator: Certification of receipt of he	Zardous materiale coursed by	the manifest	nont an a first	A -			
Prir	Design ted/Ty	nated Facility Owner or Operator: Certification of receipt of ha ped Name	zardous materials covered by			8a			
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	neury	ped Name Plum Autour D0-22 (Rev. 3-05) Previous editions are obsolete.	zardous materials covered by	Signatura	eller	Ca	tec		Month Day Year Q V V FATE (IF REQUIRED)



1550 Balmer Road Model City, NY 14107 (716) 286-1550 (716) 286-0211 Fax

SAFETY-KLEEN SYSTEMS INC ATTN: ENVIRONMENTAL COMPLIANCE DEPT. RID084840282 167 MILL ST CRANSTON RI 02905

CERTIFICATE OF DISPOSAL

CWM CHEMICAL SERVICES, L.L.C., EPA ID: NYD049836679, has received waste material from SAFETY-KLEEN SYSTEMS INC on 06/10/11 as described on Shipping Document number 000208919UIS Sequence number 01. CWM CHEMICAL SERVICES, L.L.C. hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: NY302531 CWM Tracking ID: 8164540801

CWM Unit #: 1*0 Disposal Date: 06/10/11

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verzification that this information is true accurate and complete.

MICHAEL D MAHAR DISTRICT MANAGER Certificate # 346254

our Customer Service Dept. at (800) 843-3604

For questions please call

06/13/11

Ple	ease p	rint or type. (Form designed for use on elite (12-pitch) typewriter.)						For	n Approved	, OMB No.	2050-0039
		IFORM HAZARDOUS 1. Generator ID Number WASTE MANIFEST RID084802842	2. Page 1 of 1 .		icy Response 3)238-t		4. Manifest)651	5 L	IIS
	5. G	enerator's Name and Mailing Address 3afety-Kleen Systems, Inc.		Safe	ty-Kle	een Sy	than mailing addre stems, I:	98)			
П		167 Mill Street Cranston, RI 02905			Mill 3 uston,						
		erator's Phone: 401 781-0808 ransporter 1 Company Name		· · · · ·		TA VE	×			4 -1	
	0.11	UNITED INDUSTRIAL SERVICES					U.S. EPA ID 1	Number D0218.	16880		
H	7. Ti	ransporter 2 Company Name				·	U.S. EPA ID I		20003		
	8.0	esignated Facility Name and Site Address CWM Chemical Services, LLC					U.S. EPAID I	Number		**************************************	***************************************
П	İ	1550 Blamer Road Model City, NY 14107	NY.	D0498	36679						
	Faci	itys Phone: 716 7548231									
	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		ļ	10. Contair	 	11, Total	12. Unit	13.	Waste Code	s
		1.			No.	Туре	Quantity	Wt./Vol.			
GENERATOR	X	UN3432, POLYCHLORINATED BIPHENYLS, SOLID	, MIRT	JRE.	001	СМ	15.000	K	B097	\$100\$\$000\$ \(\delta \cdot \cdo	
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	14.8	Special Handling Instructions and Additional Information 8/6/48								6/21/11	
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	М	VEIGHT IS GOT MATED OUT OF	Ser	V)Ce	TAG	5 .	06/17	-10	Kecd	161	12K
	i	GENERATOR SIGFFEROR'S CERTIFICATION: I hereby declare that the contents of this or marked and lebeled/placarded, and are in all respects in proper condition for transport according to the content of t	rding to applica	ble internatio	nai and naiio	cribed above	by the proper ship tental requisitions.	pping name	, and are clas	sified, packa	ged,
	i i	Exporter, I certify that the contents of this consignment conform to the terms of the attached I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large	EPA Acknowle	dament of C	nnsent			ii siqoot siii	pmorte disc i i	ACT 14102 6 1110416	",
		rator's/Offeror's Printed/Typed Name	Signa		A STREET				Mon	th Day	Year
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<u>.</u>	18b. A	iternate Facility (or Generator)		Manifes	Reference N	lumber:	U.S. EPA ID Nu	mher			
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		signated Facility Owner or Operator: Certification of receipt of hazardous materials covered to	by the manifest	except as n	oted in Item 1	89	·····	_			
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1550 Balmer Road Model City, NY 14107 (716) 286-1550 (716) 286-0211 Fax

SAFETY-KLEEN SYSTEMS INC ATTN: ENVIRONMENTAL COMPLIANCE DEPT. RID084840282 167 MILL ST CRANSTON RI 02905

CERTIFICATE OF DISPOSAL

CWM CHEMICAL SERVICES, L.L.C., EPA ID: NYD049836679, has received waste material from SAFETY-KLEEN SYSTEMS INC on 06/21/11 as described on Shipping Document number 000206515UIS Sequence number 01. CWM CHEMICAL SERVICES, L.L.C. hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: NY302531 CWM Tracking ID: 8164557301

CWM Unit #: 1*0 Disposal Date: 06/21/11

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who acting under my direct instructions, made the verification that this information is true accurate and complete.

rau

MICHAEL D MAHAR
DISTRICT MANAGER
Certificate # 346461
06/22/11

For questions please call our Customer Service Dept. at (800) 843-3604

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			781-0808						U.S. EPA ID Number								
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	Facility		6 7548231														
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1550 Balmer Road Model City, NY 14107 (716) 286-1550 (716) 286-0211 Fax

SAFETY-KLEEN SYSTEMS INC

ATTN: ENVIRONMENTAL COMPLIANCE DEPT.

RID084840282 167 MILL ST CRANSTON RI 02905

CERTIFICATE OF DISPOSAL

CWM CHEMICAL SERVICES, L.L.C., EPA ID: NYD049836679, has received waste material from SAFETY-KLEEN SYSTEMS INC on 06/24/11 as described on Shipping Document number 000206581UIS Sequence number 01. CWM CHEMICAL SERVICES, L.L.C. hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: NY302531 CWM Tracking ID: 8164566701

CWM Unit #: 1*0 Disposal Date: 06/24/11

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

MICHAEL D MAHAR DISTRICT MANAGER

Certificate # 346573

06/27/11

For questions please call our Customer Service Dept. at (800) 843-3604

ARRIVED PROFILE DATE NUMBER	NET WEIGHT (LBS)	MANIFEST #	RECEIPT #
08/04/11 NY302531	24260.00	000206970UIS	081646338
TOTA	L 24260.00		
08/09/11 NY302531	34420.00	008931019JJK	081646446
TOTA	L 34420.00		
TOTAL	L 58680.00		

* * * E N D O F R E P O R T * * *

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	5. Generator's Name and Mailing Address 3 a f = ty - Kleen Systems, Inc. 167 Mill Street Cranston, RI 02 905		3 a f 167	's Site Address (i ety-Klee Mill St nston,	en Jy. breet	han mailing addre stems, It	ss)			
	Generator's Phone: 401 781-0808 6. Transporter 1 Company Name				· · · · · · · · · · · · · · · · · · ·	U.S. EPA ID I	Number			
	UNITED INDUSTRIAL SERVICES					CT	00218	16889		
	7. Transporter 2 Company Name					U.S. EPAID N	lumber			
	8. Designated Facility Name and Site Address		 ,			U.S. EPA ID N	lumber			
	CWM Chemical Services, LLC 1550 Blamer Road					NYI	00498	36679		
	Model City, NY 14107									
	Facility's Phone: 716 75 482 31 9a. 9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number			10. Containe	irs.	11, Total	12. Unit		·····	
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	14. Special Handling Instructions and Additional Information PCB CONTAININATED SI P0 5031100 EMERGENCY PH# (203) 238-5745 SIGNERATOR'S OFFEROR'S CERTIFICATION: I hereby declare that the contents of this marked and labeled/placarded, and are in all respects in proper condition for transport acc Exporter, I certify that the contents of this consignment conform to the terms of the attached.	s consignment an cording to applica	e fully and ble interna	PCR accurately descri	O C	S = 7	/27	And are clas	P (A	aned
	I certify that the waste minimization statement identified in 40 CFR 262-27(a) (if I am a large	ge quantity gener	ator) or (b)	(if i am a small q	juantity ger	nerator) is true.				
	Generator's/Offeror's Printed/Typed Name Wowell	Signa	ture	4	<u> </u>			Mont	,	Year
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IGNATE	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treat	ment disposal a	nd recyclic	n cuetame)	······································			y.or	h Day	Year
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1550 Balmer Road Model City, NY 14107 (716) 286-1550 (716) 286-0211 Fax

UNITED OIL RECOVERY
ATTN: ENVIRONMENTAL COMPLIANCE DEPT.
RID084802842
167 MILL ST
CRANSTON RI 02905-1049

CERTIFICATE OF DISPOSAL

CWM CHEMICAL SERVICES, L.L.C., EPA ID: NYD049836679, has received waste material from UNITED OIL RECOVERY on 08/04/11 as described on Shipping Document number 000206970UIS Sequence number 01. CWM CHEMICAL SERVICES, L.L.C. hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: NY302531 CWM Tracking ID: 8164633801

CWM Unit #: 1*0 Disposal Date: 08/04/11

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

MICHAEL D MAHAR
DISTRICT MANAGER
Certificate # 347432
08/08/11

For questions please call our Customer Service Dept. at (800) 843-3604

WASTE MANFEST S. Committed Name and Name and Name Address 3 at ety.—Title and Systems. Inc. 167 Mill Street 17. Innepoted 2 Congous Name US. EPAID Number 1550 Blamer Road Model City. NY 18107 Facility Pronc. 716 7548221 96. US. DOT Description feedomy Proper Shipping Name, Hazard Class, ID Number, 178 Mill Street 178 Special Handling Name and Additional Indicention 178 Special Handling Name and Additional Indicention 178 Special Handling Name and Additional Indicention 178 Special Handling Name and Additional Indicention 178 Special Handling Name and Additional Indicention 178 Special Handling Name and Additional Indicention 178 Special Handling Name and Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention 178 Special Handling Name Additional Indicention Indicention Indicention Indice	T. 1			Generator ID Number	i) typewriter.)	\$40 -				Fo	evonadě mic	ed OMR	No. 2050
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C. GENERATOR SIGNETHEAD SECRIFICATION: I hereby declare that the configerent is the configerent are fully and accurately described above by the proper signing name, and are classified, peckaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental repulsions; if export shipments and in all the Primary I certify that the waste minimization statement identified in 40 GFR 292.27(a) (if I am a lating quantity generator) or (b) (if I am a small quantity generator) is true. Generator's Offeror's Printed Typed Name	14	Spec	ial Handling Instructions a	nd Additional Information	Perd 15/12	2 1/	<u> </u>	L					
18. Intervational Shipments	15.	GÉI mar Exp I cei	NERATOR'S/OFFEROR'S ked and labeled/placarder orter, I certify that the cont tify that the waste minimiz 's/Offeror's Printed/Typed	CERTIFICATION: I hereby dec it, and are in all respects in prope ents of this consignment conformation statement identified in 40 C Name	iare that the contents of this co r condition for transport accord	onsignment are fully ling to applicable int PAAcknowledgmer pantify generator) o	and accurately desernational and national and national are for Consent, ir (b) (if I am a small	scribed above onal government of quantity gen	by the proper ship ental regulations. I perator) is true.	Pring name, f export ship	and are class oment and I are	sified, pacl m the Prin	nary
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1550 Balmer Road Model City, NY 14107 (716) 286-1550 (716) 286-0211 Fax

UNITED OIL RECOVERY ATTN: ENVIRONMENTAL COMPLIANCE DEPT. RID084802842 167 MILL ST CRANSTON RI 02905-1049

CERTIFICATE OF DISPOSAL _______

CWM CHEMICAL SERVICES, L.L.C., EPA ID: NYD049836679, has received waste material from UNITED OIL RECOVERY on 08/09/11 as described on Shipping Document number 008931019JJK Sequence number 01. CWM CHEMICAL SERVICES, L.L.C. hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: NY302531 CWM Tracking ID: 8164644601

CWM Unit #: 1*0 Disposal Date: 08/09/11

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

MICHAEL D MAHAR DISTRICT MANAGER Certificate # 347587

08/10/11

For questions please call our Customer Service Dept. at (800) 843-3604

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APPENDIX D: LABORATORY DATA – BACKFILL SOIL (ON CD)



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Janelle Bonn Woodard & Curran - RI 95 Cedar Street, Suite 100 Providence, RI 02903

RE: SK Cranston (219303)

ESS Laboratory Work Order Number: 1106301

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

SAMPLE RECEIPT

The following samples were received on June 24, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number 1106301-01

SampleName SP 3/4 Loam 1

Matrix Soil Analysis

6010B, 7471A, 7841, 8081A, 8082, 8100M, 8260B

Low, 8270C, 9014



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

1106301-01 <u>Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).</u>

1,4-Dichlorobenzene-D4 (48% @ 50-200%)

CF12704-BSD1 Blank Spike recovery is below lower control limit (B-).

Diethyl Ether (69% @ 70-130%)

CF12704-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

Acetone (27%)

8081A Organochlorine Pesticides

1106301-01 Percent difference between primary and confirmation results exceeds 40% (P).

alpha-Chlordane [2C]

CUF0170-CCV3 Percent difference between primary and confirmation results exceeds 40% (P).

Hexachlorobenzene (120% @ 85-115%)

8100M Total Petroleum Hydrocarbons

CF12918-MSD1 <u>Matrix Spike recovery is above upper control limit (M+).</u>

Total Petroleum Hydrocarbons (191% @ 40-140%)

8270C Semi-Volatile Organic Compounds

CUF0168-CCV1 **DDT breakdown > 20%**

CUF0168-CCV1 Initial Calibration Verification recovery is outside of control limit (ICV).

Isophorone, Pentachlorophenol

CUF0168-CCV1 <u>Pentachlorophenol tailing factor > 2.</u>

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1 Date Sampled: 06/24/11 09:00

Percent Solids: 91

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil Units: mg/kg dry

3050B/6000/7000 Total Metals

RI - RES DEC

Analyte	Results (MRL)	Method	<u>Limit</u>	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.1)	6010B	10	1	SVD	06/28/11 16:41	2.14	100	CF12709
Arsenic	ND (2.6)	6010B	7	1	SVD	06/28/11 16:41	2.14	100	CF12709
Barium	21.8 (2.6)	6010B	5500	1	SVD	06/28/11 16:41	2.14	100	CF12709
Beryllium	0.33 (0.11)	6010B	0.4	1	SVD	06/28/11 16:41	2.14	100	CF12709
Cadmium	ND (0.52)	6010B	39	1	SVD	06/28/11 16:41	2.14	100	CF12709
Chromium	6.6 (1.0)	6010B	1400	1	SVD	06/28/11 16:41	2.14	100	CF12709
Copper	9.7 (2.6)	6010B	3100	1	SVD	06/28/11 16:41	2.14	100	CF12709
Lead	20.3 (5.1)	6010B	150	1	SVD	06/28/11 16:41	2.14	100	CF12709
Mercury	ND (0.031)	7471A	23	1	JP	06/27/11 18:14	0.7	40	CF12711
Nickel	4.1 (2.6)	6010B	1000	1	SVD	06/28/11 16:41	2.14	100	CF12709
Selenium	ND (5.1)	6010B	390	1	SVD	06/28/11 16:41	2.14	100	CF12709
Silver	ND (0.52)	6010B	200	1	SVD	06/28/11 16:41	2.14	100	CF12709
Thallium	ND (1.27)	7841	5.5	5	SVD	06/29/11 16:24	2.14	100	CF12709
Zinc	24.8 (2.6)	6010B	6000	1	SVD	06/28/11 16:41	2.14	100	CF12709



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1 Date Sampled: 06/24/11 09:00

Percent Solids: 91 Initial Volume: 5.5 Final Volume: 10

Extraction Method: 5035

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil Units: mg/kg dry Analyst: MD

		RI - RES DI	EC			
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)	2.2	1	06/27/11 12:57	CUF0161	CF12704
1,1,1-Trichloroethane	ND (0.0050)	540	1	06/27/11 12:57	CUF0161	CF12704
1,1,2,2-Tetrachloroethane	ND (0.0050)	1.3	1	06/27/11 12:57	CUF0161	CF12704
1,1,2-Trichloroethane	ND (0.0050)	3.6	1	06/27/11 12:57	CUF0161	CF12704
1,1-Dichloroethane	ND (0.0050)	920	1	06/27/11 12:57	CUF0161	CF12704
1,1-Dichloroethene	ND (0.0050)	0.2	1	06/27/11 12:57	CUF0161	CF12704
1,1-Dichloropropene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
1,2,3-Trichlorobenzene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
1,2,3-Trichloropropane	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
1,2,4-Trichlorobenzene	ND (0.0050)	96	1	06/27/11 12:57	CUF0161	CF12704
1,2,4-Trimethylbenzene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.5	1	06/27/11 12:57	CUF0161	CF12704
1,2-Dibromoethane	ND (0.0050)	0.01	1	06/27/11 12:57	CUF0161	CF12704
1,2-Dichlorobenzene	ND (0.0050)	510	1	06/27/11 12:57	CUF0161	CF12704
1,2-Dichloroethane	ND (0.0050)	0.9	1	06/27/11 12:57	CUF0161	CF12704
1,2-Dichloropropane	ND (0.0050)	1.9	1	06/27/11 12:57	CUF0161	CF12704
1,3,5-Trimethylbenzene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
1,3-Dichlorobenzene	ND (0.0050)	430	1	06/27/11 12:57	CUF0161	CF12704
1,3-Dichloropropane	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
1,4-Dichlorobenzene	ND (0.0050)	27	1	06/27/11 12:57	CUF0161	CF12704
1,4-Dioxane	ND (0.0999)		1	06/27/11 12:57	CUF0161	CF12704
1-Chlorohexane	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
2,2-Dichloropropane	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
2-Butanone	ND (0.0500)	10000	1	06/27/11 12:57	CUF0161	CF12704
2-Chlorotoluene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
2-Hexanone	ND (0.0500)		1	06/27/11 12:57	CUF0161	CF12704
4-Chlorotoluene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
4-Isopropyltoluene	0.0062 (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
4-Methyl-2-Pentanone	ND (0.0500)	1200	1	06/27/11 12:57	CUF0161	CF12704
Acetone	ND (0.0500)	7800	1	06/27/11 12:57	CUF0161	CF12704
Benzene	ND (0.0050)	2.5	1	06/27/11 12:57	CUF0161	CF12704



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1 Date Sampled: 06/24/11 09:00

Percent Solids: 91 Initial Volume: 5.5 Final Volume: 10

Extraction Method: 5035

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil Units: mg/kg dry Analyst: MD

		RI - RES D	EC			
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>		Sequence	Batch
Bromobenzene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Bromochloromethane	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Bromodichloromethane	ND (0.0050)	10	1	06/27/11 12:57	CUF0161	CF12704
Bromoform	ND (0.0050)	81	1	06/27/11 12:57	CUF0161	CF12704
Bromomethane	ND (0.0100)	0.8	1	06/27/11 12:57	CUF0161	CF12704
Carbon Disulfide	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Carbon Tetrachloride	ND (0.0050)	1.5	1	06/27/11 12:57	CUF0161	CF12704
Chlorobenzene	ND (0.0050)	210	1	06/27/11 12:57	CUF0161	CF12704
Chloroethane	ND (0.0100)		1	06/27/11 12:57	CUF0161	CF12704
Chloroform	ND (0.0050)	1.2	1	06/27/11 12:57	CUF0161	CF12704
Chloromethane	ND (0.0100)		1	06/27/11 12:57	CUF0161	CF12704
cis-1,2-Dichloroethene	ND (0.0050)	630	1	06/27/11 12:57	CUF0161	CF12704
cis-1,3-Dichloropropene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Dibromochloromethane	ND (0.0050)	7.6	1	06/27/11 12:57	CUF0161	CF12704
Dibromomethane	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Dichlorodifluoromethane	ND (0.0100)		1	06/27/11 12:57	CUF0161	CF12704
Diethyl Ether	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Di-isopropyl ether	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Ethyl tertiary-butyl ether	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Ethylbenzene	ND (0.0050)	71	1	06/27/11 12:57	CUF0161	CF12704
Hexachlorobutadiene	ND (0.0050)	8.2	1	06/27/11 12:57	CUF0161	CF12704
Isopropylbenzene	ND (0.0050)	27	1	06/27/11 12:57	CUF0161	CF12704
Methyl tert-Butyl Ether	ND (0.0050)	390	1	06/27/11 12:57	CUF0161	CF12704
Methylene Chloride	ND (0.0250)	45	1	06/27/11 12:57	CUF0161	CF12704
Naphthalene	ND (0.0050)	54	1	06/27/11 12:57	CUF0161	CF12704
n-Butylbenzene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
n-Propylbenzene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
sec-Butylbenzene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Styrene	ND (0.0050)	13	1	06/27/11 12:57	CUF0161	CF12704
tert-Butylbenzene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Tertiary-amyl methyl ether	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
	* *					



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1 Date Sampled: 06/24/11 09:00

Percent Solids: 91 Initial Volume: 5.5 Final Volume: 10

Extraction Method: 5035

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil Units: mg/kg dry Analyst: MD

		RI - RES D	EC			
<u>Analyte</u>	Results (MRL)	<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch
Tetrachloroethene	ND (0.0050)	12	1	06/27/11 12:57	CUF0161	CF12704
Tetrahydrofuran	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Toluene	ND (0.0050)	190	1	06/27/11 12:57	CUF0161	CF12704
trans-1,2-Dichloroethene	ND (0.0050)	1100	1	06/27/11 12:57	CUF0161	CF12704
trans-1,3-Dichloropropene	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Trichloroethene	ND (0.0050)	13	1	06/27/11 12:57	CUF0161	CF12704
Trichlorofluoromethane	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Vinyl Acetate	ND (0.0050)		1	06/27/11 12:57	CUF0161	CF12704
Vinyl Chloride	ND (0.0100)	0.02	1	06/27/11 12:57	CUF0161	CF12704
Xylene O	ND (0.0050)	110	1	06/27/11 12:57	CUF0161	CF12704
Xylene P,M	ND (0.0100)	110	1	06/27/11 12:57	CUF0161	CF12704
Xylenes (Total)	ND (0.0150)	110	1	06/27/11 12:57		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	129 %		70-130
Surrogate: 4-Bromofluorobenzene	89 %		70-130
Surrogate: Dibromofluoromethane	119 %		70-130
Surrogate: Toluene-d8	110 %		70-130



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Client Sample ID: SP 3/4 Loam 1 Date Sampled: 06/24/11 09:00

Percent Solids: 91 Initial Volume: 20.9 Final Volume: 5

Extraction Method: 3546

Surrogate: Tetrachloro-m-xylene [2C]

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 6/27/11 16:00

8081A Organochlorine Pesticides

				RI - RES DI	EC			
Analyte	Results (MRL)	<u>!</u>		<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch
4,4′-DDD	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
4,4'-DDE	0.0065 (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
4,4'-DDT [2C]	0.0061 (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Aldrin	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
alpha-BHC	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
alpha-Chlordane [2C]	P 0.0053 (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
beta-BHC	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Chlordane (Total)	0.0412 (0.0315)			0.5	1	06/28/11 15:56	CUF0170	CF12723
delta-BHC	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Dieldrin	ND (0.0026)			0.04	1	06/28/11 15:56	CUF0170	CF12723
Endosulfan I	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Endosulfan II	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Endosulfan Sulfate	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Endrin	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Endrin Aldehyde	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Endrin Ketone	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
gamma-BHC (Lindane)	ND (0.0016)				1	06/28/11 15:56	CUF0170	CF12723
gamma-Chlordane [2C]	0.0044 (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Heptachlor	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Heptachlor Epoxide	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Hexachlorobenzene	ND (0.0026)			0.4	1	06/28/11 15:56	CUF0170	CF12723
Methoxychlor	ND (0.0026)				1	06/28/11 15:56	CUF0170	CF12723
Toxaphene	ND (0.131)				1	06/28/11 15:56	CUF0170	CF12723
		%Recovery	Qualifier	Limits				
Surrogate: Decachlorobiphenyl		85 %		30-150				
Surrogate: Decachlorobiphenyl [2C]		79 %		30-150				
Surrogate: Tetrachloro-m-xylene		69 %		30-150				

30-150



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1 Date Sampled: 06/24/11 09:00

Percent Solids: 91 Initial Volume: 20.5 Final Volume: 10

Extraction Method: 3540

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/24/11 18:00

8082 Polychlorinated Biphenyls (PCB)

				RI - RES D	EC			
<u>Analyte</u>	Results (MRL)			<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0536)			10	1	06/28/11 7:02		CF12424
Aroclor 1221	ND (0.0536)			10	1	06/28/11 7:02		CF12424
Aroclor 1232	ND (0.0536)			10	1	06/28/11 7:02		CF12424
Aroclor 1242	ND (0.0536)			10	1	06/28/11 7:02		CF12424
Aroclor 1248	ND (0.0536)			10	1	06/28/11 7:02		CF12424
Aroclor 1254	ND (0.0536)			10	1	06/28/11 7:02		CF12424
Aroclor 1260	ND (0.0536)			10	1	06/28/11 7:02		CF12424
Aroclor 1262	ND (0.0536)			10	1	06/28/11 7:02		CF12424
Aroclor 1268	ND (0.0536)			10	1	06/28/11 7:02		CF12424
		%Recovery	Qualifier	Limits				
Surrogate: Decachlorobiphenyl		87 %		30-150				
Surrogate: Decachlorobiphenyl [2C]		92 %		30-150				
Surrogate: Tetrachloro-m-xylene		87 %		30-150				
Surrogate: Tetrachloro-m-xylene [2C]		89 %		30-150				



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1 Date Sampled: 06/24/11 09:00

Percent Solids: 91 Initial Volume: 20.4 Final Volume: 1

Surrogate: O-Terphenyl

Extraction Method: 3546

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil Units: mg/kg dry Analyst: ML

Prepared: 6/29/11 16:00

8100M Total Petroleum Hydrocarbons

			J	KI - KES D	EC			
<u>Analyte</u>	Results (MRL))		<u>Limit</u>	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	75.4 (40.4)			500	1	06/30/11 13:32	CUF0200	CF12918
		%Recovery	Oualifier	Limits				

40-140

110 %

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486

http://www.ESSLaboratory.com



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1

Date Sampled: 06/24/11 09:00

Percent Solids: 91 Initial Volume: 15.7 Final Volume: 0.5 Extraction Method: 3546 ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/27/11 16:00

8270C Semi-Volatile Organic Compounds

Analyte Results (MRL) Limit DF Analyzed Sequence Batch 1,1-Biphenyl ND (0.350) 0.8 1 06/27/11 19:22 CUF0168 CF12724 1,2,4-Trichlorobenzene ND (0.350) 96 1 06/27/11 19:22 CUF0168 CF12724 1,2-Dichlorobenzene ND (0.350) 510 1 06/27/11 19:22 CUF0168 CF12724 1,4-Dichlorobenzene ND (0.350) 27 1 06/27/11 19:22 CUF0168 CF12724 2,3,4,6-Tetrachlorophenol ND (0.350) 330 1 06/27/11 19:22 CUF0168 CF12724 2,4,6-Trichlorophenol ND (0.350) 330 1 06/27/11 19:22 CUF0168 CF12724 2,4,6-Trichlorophenol ND (0.350) 58 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dichlorophenol ND (0.350) 30 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724 </th
1,2,4-Trichlorobenzene ND (0.350) 96 1 06/27/11 19:22 CUF0168 CF12724 1,2-Dichlorobenzene ND (0.350) 510 1 06/27/11 19:22 CUF0168 CF12724 1,3-Dichlorobenzene ND (0.350) 430 1 06/27/11 19:22 CUF0168 CF12724 1,4-Dichlorobenzene ND (0.350) 27 1 06/27/11 19:22 CUF0168 CF12724 2,3,4,6-Tetrachlorophenol ND (1.75) 1 06/27/11 19:22 CUF0168 CF12724 2,4,5-Trichlorophenol ND (0.350) 330 1 06/27/11 19:22 CUF0168 CF12724 2,4,6-Trichlorophenol ND (0.350) 58 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dichlorophenol ND (0.350) 30 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724
1,2-Dichlorobenzene ND (0.350) 510 1 06/27/11 19:22 CUF0168 CF12724 1,3-Dichlorobenzene ND (0.350) 430 1 06/27/11 19:22 CUF0168 CF12724 1,4-Dichlorobenzene ND (0.350) 27 1 06/27/11 19:22 CUF0168 CF12724 2,3,4,6-Tetrachlorophenol ND (1.75) 1 06/27/11 19:22 CUF0168 CF12724 2,4,5-Trichlorophenol ND (0.350) 330 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dichlorophenol ND (0.350) 58 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dichlorophenol ND (0.350) 30 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724
1,3-Dichlorobenzene ND (0.350) 430 1 06/27/11 19:22 CUF0168 CF12724 1,4-Dichlorobenzene ND (0.350) 27 1 06/27/11 19:22 CUF0168 CF12724 2,3,4,6-Tetrachlorophenol ND (1.75) 1 06/27/11 19:22 CUF0168 CF12724 2,4,5-Trichlorophenol ND (0.350) 330 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dichlorophenol ND (0.350) 58 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 30 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724
1,4-Dichlorobenzene ND (0.350) 27 1 06/27/11 19:22 CUF0168 CF12724 2,3,4,6-Tetrachlorophenol ND (1.75) 1 06/27/11 19:22 CUF0168 CF12724 2,4,5-Trichlorophenol ND (0.350) 330 1 06/27/11 19:22 CUF0168 CF12724 2,4,6-Trichlorophenol ND (0.350) 58 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dichlorophenol ND (0.350) 30 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724
2,3,4,6-Tetrachlorophenol ND (1.75) 1 06/27/11 19:22 CUF0168 CF12724 2,4,5-Trichlorophenol ND (0.350) 330 1 06/27/11 19:22 CUF0168 CF12724 2,4,6-Trichlorophenol ND (0.350) 58 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dichlorophenol ND (0.350) 30 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724
2,4,5-Trichlorophenol ND (0.350) 330 1 06/27/11 19:22 CUF0168 CF12724 2,4,6-Trichlorophenol ND (0.350) 58 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dichlorophenol ND (0.350) 30 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724
2,4,6-Trichlorophenol ND (0.350) 58 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dichlorophenol ND (0.350) 30 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724
2,4-Dichlorophenol ND (0.350) 30 1 06/27/11 19:22 CUF0168 CF12724 2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724
2,4-Dimethylphenol ND (0.350) 1400 1 06/27/11 19:22 CUF0168 CF12724
2,4-Dinitrophenol ND (1.75) 160 1 06/27/11 19:22 CUF0168 CF12724
2,4-Dinitrotoluene ND (0.350) 0.9 1 06/27/11 19:22 CUF0168 CF12724
2,6-Dinitrotoluene ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
2-Chloronaphthalene ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
2-Chlorophenol ND (0.350) 50 1 06/27/11 19:22 CUF0168 CF12724
2-Methylnaphthalene ND (0.350) 123 1 06/27/11 19:22 CUF0168 CF12724
2-Methylphenol ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
2-Nitroaniline ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
2-Nitrophenol ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
3,3'-Dichlorobenzidine ND (0.700) 1.4 1 06/27/11 19:22 CUF0168 CF12724
3+4-Methylphenol ND (0.700) 1 06/27/11 19:22 CUF0168 CF12724
3-Nitroaniline ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
4,6-Dinitro-2-Methylphenol ND (1.75) 1 06/27/11 19:22 CUF0168 CF12724
4-Bromophenyl-phenylether ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
4-Chloro-3-Methylphenol ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
4-Chloroaniline ND (0.700) 310 1 06/27/11 19:22 CUF0168 CF12724
4-Chloro-phenyl-phenyl ether ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
4-Nitroaniline ND (0.350) 1 06/27/11 19:22 CUF0168 CF12724
4-Nitrophenol ND (1.75) 1 06/27/11 19:22 CUF0168 CF12724
Acenaphthene ND (0.350) 43 1 06/27/11 19:22 CUF0168 CF12724
Acenaphthylene ND (0.350) 23 1 06/27/11 19:22 CUF0168 CF12724



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1 Date Sampled: 06/24/11 09:00

Percent Solids: 91 Initial Volume: 15.7 Final Volume: 0.5 Extraction Method: 3546

Units: Analys

Final Volume: 0.5 Prepared: 6/27/11 16:00

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01 Sample Matrix: Soil

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

RI - RES DEC

8270C Semi-Volatile Organic Compounds

		KI - KES D	EC			
Analyte Acetophenone	Results (MRL) ND (0.700)	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u> 06/27/11 19:22	Sequence CUF0168	Batch CF12724
Aniline	ND (0.700)		1	06/27/11 19:22	CUF0168	CF12724
Anthracene	ND (0.350)	35	1	06/27/11 19:22	CUF0168	CF12724
Azobenzene	ND (0.350)		1	06/27/11 19:22	CUF0168	CF12724
Benzo(a)anthracene	ND (0.350)	0.9	1	06/27/11 19:22	CUF0168	CF12724
Benzo(a)pyrene	0.303 (0.175)	0.4	1	06/27/11 19:22	CUF0168	CF12724
Benzo(b)fluoranthene	0.413 (0.350)	0.9	1	06/27/11 19:22	CUF0168	CF12724
Benzo(g,h,i)perylene	ND (0.350)	0.8	1	06/27/11 19:22	CUF0168	CF12724
Benzo(k)fluoranthene	ND (0.350)	0.9	1	06/27/11 19:22	CUF0168	CF12724
Benzoic Acid	ND (1.75)		1	06/27/11 19:22	CUF0168	CF12724
Benzyl Alcohol	ND (0.350)		1	06/27/11 19:22	CUF0168	CF12724
bis(2-Chloroethoxy)methane	ND (0.350)		1	06/27/11 19:22	CUF0168	CF12724
bis(2-Chloroethyl)ether	ND (0.350)	0.6	1	06/27/11 19:22	CUF0168	CF12724
bis(2-chloroisopropyl)Ether	ND (0.350)	9.1	1	06/27/11 19:22	CUF0168	CF12724
bis(2-Ethylhexyl)phthalate	ND (0.350)	46	1	06/27/11 19:22	CUF0168	CF12724
Butylbenzylphthalate	ND (0.350)		1	06/27/11 19:22	CUF0168	CF12724
Carbazole	ND (0.350)		1	06/27/11 19:22	CUF0168	CF12724
Chrysene	0.344 (0.175)	0.4	1	06/27/11 19:22	CUF0168	CF12724
Dibenzo(a,h)Anthracene	ND (0.175)	0.4	1	06/27/11 19:22	CUF0168	CF12724
Dibenzofuran	ND (0.350)		1	06/27/11 19:22	CUF0168	CF12724
Diethylphthalate	ND (0.350)	340	1	06/27/11 19:22	CUF0168	CF12724
Dimethylphthalate	ND (0.350)	1900	1	06/27/11 19:22	CUF0168	CF12724
Di-n-butylphthalate	ND (0.350)		1	06/27/11 19:22	CUF0168	CF12724
Di-n-octylphthalate	ND (0.350)		1	06/27/11 19:22	CUF0168	CF12724
Fluoranthene	0.701 (0.350)	20	1	06/27/11 19:22	CUF0168	CF12724
Fluorene	ND (0.350)	28	1	06/27/11 19:22	CUF0168	CF12724
Hexachlorobenzene	ND (0.175)	0.4	1	06/27/11 19:22	CUF0168	CF12724
Hexachlorobutadiene	ND (0.350)	8.2	1	06/27/11 19:22	CUF0168	CF12724
Hexachlorocyclopentadiene	ND (1.75)		1	06/27/11 19:22	CUF0168	CF12724
Hexachloroethane	ND (0.350)	46	1	06/27/11 19:22	CUF0168	CF12724
Indeno(1,2,3-cd)Pyrene	ND (0.350)	0.9	1	06/27/11 19:22	CUF0168	CF12724



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1

Date Sampled: 06/24/11 09:00

Percent Solids: 91 Initial Volume: 15.7 Final Volume: 0.5 Extraction Method: 3546

Surrogate: Phenol-d6

Surrogate: p-Terphenyl-d14

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil Units: mg/kg dry Analyst: IBM

Prepared: 6/27/11 16:00

8270C Semi-Volatile Organic Compounds

				RI - RES D	EC			
Analyte	Results (MRL)			<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch
Isophorone	ND (0.350)				1	06/27/11 19:22	CUF0168	CF12724
Naphthalene	ND (0.350)			54	1	06/27/11 19:22	CUF0168	CF12724
Nitrobenzene	ND (0.350)				1	06/27/11 19:22	CUF0168	CF12724
N-Nitrosodimethylamine	ND (0.350)				1	06/27/11 19:22	CUF0168	CF12724
N-Nitroso-Di-n-Propylamine	ND (0.350)				1	06/27/11 19:22	CUF0168	CF12724
N-nitrosodiphenylamine	ND (0.350)				1	06/27/11 19:22	CUF0168	CF12724
Pentachlorophenol	ND (1.75)			5.3	1	06/27/11 19:22	CUF0168	CF12724
Phenanthrene	0.410 (0.350)			40	1	06/27/11 19:22	CUF0168	CF12724
Phenol	ND (0.350)			6000	1	06/27/11 19:22	CUF0168	CF12724
Pyrene	0.561 (0.350)			13	1	06/27/11 19:22	CUF0168	CF12724
Pyridine	ND (1.75)				1	06/27/11 19:22	CUF0168	CF12724
	%.	Recovery	Qualifier	Limits				
Surrogate: 1,2-Dichlorobenzene-d4		75 %		30-130				
Surrogate: 2,4,6-Tribromophenol		83 %		30-130				
Surrogate: 2-Chlorophenol-d4		69 %		30-130				
Surrogate: 2-Fluorobiphenyl		77 %		30-130				
Surrogate: 2-Fluorophenol		67 %		30-130				
Surrogate: Nitrobenzene-d5		77 %		30-130				

69 %

78 %

30-130

30-130



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston Client Sample ID: SP 3/4 Loam 1 Date Sampled: 06/24/11 09:00

Percent Solids: 91

ESS Laboratory Work Order: 1106301 ESS Laboratory Sample ID: 1106301-01

Sample Matrix: Soil

Classical Chemistry

RI - RES DEC

Analyte Results (MRL) Method <u>Limit</u> DF **Analyst Analyzed Batch** Total Cyanide ND (1.09) 9014 200 EEM 06/30/11 10:50 mg/kg dry CF13005



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Batch CF12709 - 3050B

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

3050B/6000/7000 Total Metals

Batch CF12/09 - 3050B									
Blank									
Antimony	ND	5.0	mg/kg wet						
Arsenic	ND	2.5	mg/kg wet						
Barium	ND	2.5	mg/kg wet						
Beryllium	ND	0.10	mg/kg wet						
Cadmium	ND	0.50	mg/kg wet						
Chromium	ND	1.0	mg/kg wet						
Copper	ND	2.5	mg/kg wet						
Lead	ND	5.0	mg/kg wet						
Nickel	ND	2.5	mg/kg wet						
Selenium	ND	5.0	mg/kg wet						
Silver	ND	0.50	mg/kg wet						
Thallium	ND	0.25	mg/kg wet						
Zinc	ND	2.5	mg/kg wet						
LCS									
Antimony	109	18.5	mg/kg wet	120.0	91	80-120			
Arsenic	113	9.2	mg/kg wet	124.0	91	80-120			
Barium	296	9.2	mg/kg wet	316.0	94	80-120			
Beryllium	85.8	0.39	mg/kg wet	95.00	90	80-120			
Cadmium	104	1.86	mg/kg wet	116.0	89	80-120			
Chromium	88.3	3.7	mg/kg wet	95.90	92	80-120			
Copper	77.4	9.2	mg/kg wet	82.80	94	80-120			
Lead	128	18.5	mg/kg wet	137.0	93	80-120			
Nickel	113	9.2	mg/kg wet	121.0	93	80-120			
Selenium	189	18.5	mg/kg wet	202.0	93	80-120			
Silver	49.4	1.86	mg/kg wet	53.50	92	80-120			
Thallium	209	91.7	mg/kg wet	231.0	91	80-120			
Zinc	240	9.2	mg/kg wet	275.0	87	80-120			
LCS Dup									
Antimony	114	18.5	mg/kg wet	120.0	95	80-120	5	20	
Arsenic	113	9.2	mg/kg wet	124.0	91	80-120	0.5	20	
Barium	289	9.2	mg/kg wet	316.0	92	80-120	2	20	
Beryllium	86.0	0.39	mg/kg wet	95.00	91	80-120	0.3	20	
Cadmium	103	1.86	mg/kg wet	116.0	89	80-120	1	20	
Chromium	87.0	3.7	mg/kg wet	95.90	91	80-120	2	20	
Copper	77.5	9.2	mg/kg wet	82.80	94	80-120	0.06	20	
Lead	127	18.5	mg/kg wet	137.0	92	80-120	0.9	20	
Nickel	111	9.2	mg/kg wet	121.0	91	80-120	2	20	
Selenium	190	18.5	mg/kg wet	202.0	94	80-120	0.6	20	
Silver	48.3	1.86	mg/kg wet	53.50	90	80-120	2	20	
Thallium	205	91.7	mg/kg wet	231.0	89	80-120	2	20	
Zinc	236	9.2	mg/kg wet	275.0	86	80-120	2	20	
	230	۶.۲	mg/kg wet	2/3.0		00 120		20	

Blank

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Quality

Dependability

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CERTIFICATE OF ANALYSIS

Source: 1106301-01

0.230

0.031

Matrix Spike Dup

Mercury

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

75-125

35

Quality Control Data

					Spike	Source		%REC		RPD	
Analyte		Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
			3050B/	6000/7000 T	otal Meta	als					
Batch CF12711 - 7	7471A										
Mercury	_	ND	0.033	mg/kg wet							
LCS											
Mercury		14.3	1.46	mg/kg wet	15.20		94	80-120			
LCS Dup											
Mercury		14.3	1.55	mg/kg wet	15.20		94	80-120	0.2	20	
Duplicate	Source: 1106301-01										
Mercury		0.0164	0.035	mg/kg dry		0.0217			28	35	
Matrix Spike	Source: 1106301-01										
Mercury		0.215	0.033	mg/kg dry	0.1998	0.0217	97	75-125			

mg/kg dry 5035/8260B Volatile Organic Compounds / Low Level

0.1884

0.0217

Batch CF12704 - 5035				
Blank				
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet	
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet	
1,1,2,2-Tetrachloroethane	ND	0.0050	mg/kg wet	
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet	
1,1-Dichloroethane	ND	0.0050	mg/kg wet	
1,1-Dichloroethene	ND	0.0050	mg/kg wet	
1,1-Dichloropropene	ND	0.0050	mg/kg wet	
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet	
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet	
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet	
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet	
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet	
1,2-Dibromoethane	ND	0.0050	mg/kg wet	
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet	
1,2-Dichloroethane	ND	0.0050	mg/kg wet	
1,2-Dichloropropane	ND	0.0050	mg/kg wet	
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet	
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet	
1,3-Dichloropropane	ND	0.0050	mg/kg wet	
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet	
1,4-Dioxane	ND	0.100	mg/kg wet	
1-Chlorohexane	ND	0.0050	mg/kg wet	
2,2-Dichloropropane	ND	0.0050	mg/kg wet	
2-Butanone	ND	0.0500	mg/kg wet	
2-Chlorotoluene	ND	0.0050	mg/kg wet	
2-Hexanone	ND	0.0500	mg/kg wet	
4-Chlorotoluene	ND	0.0050	mg/kg wet	
4-Isopropyltoluene	ND	0.0050	mg/kg wet	
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet	

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CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Batch CF12704 - 5035

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD		
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier	

Batch CF12/04 - 5035							
Acetone	ND	0.0500	mg/kg wet				
Benzene	ND	0.0050	mg/kg wet				
Bromobenzene	ND	0.0050	mg/kg wet				
Bromochloromethane	ND	0.0050	mg/kg wet				
Bromodichloromethane	ND	0.0050	mg/kg wet				
Bromoform	ND	0.0050	mg/kg wet				
Bromomethane	ND	0.0100	mg/kg wet				
Carbon Disulfide	ND	0.0050	mg/kg wet				
Carbon Tetrachloride	ND	0.0050	mg/kg wet				
Chlorobenzene	ND	0.0050	mg/kg wet				
Chloroethane	ND	0.0100	mg/kg wet				
Chloroform	ND	0.0050	mg/kg wet				
Chloromethane	ND	0.0100	mg/kg wet				
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet				
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet				
Dibromochloromethane	ND	0.0050	mg/kg wet				
Dibromomethane	ND	0.0050	mg/kg wet				
Dichlorodifluoromethane	ND	0.0100	mg/kg wet				
Diethyl Ether	ND	0.0050	mg/kg wet				
Di-isopropyl ether	ND	0.0050	mg/kg wet				
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet				
Ethylbenzene	ND	0.0050	mg/kg wet				
Hexachlorobutadiene	ND	0.0050	mg/kg wet				
Isopropylbenzene	ND	0.0050	mg/kg wet				
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet				
Methylene Chloride	ND	0.0250	mg/kg wet				
Naphthalene	ND	0.0050	mg/kg wet				
n-Butylbenzene	ND	0.0050	mg/kg wet				
n-Propylbenzene	ND	0.0050	mg/kg wet				
sec-Butylbenzene	ND	0.0050	mg/kg wet				
Styrene	ND	0.0050	mg/kg wet				
tert-Butylbenzene	ND	0.0050	mg/kg wet				
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet				
Tetrachloroethene	ND	0.0050	mg/kg wet				
Tetrahydrofuran	ND	0.0050	mg/kg wet				
Toluene	ND	0.0050	mg/kg wet				
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet				
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet				
Trichloroethene	ND	0.0050	mg/kg wet				
Vinyl Acetate	ND	0.0050	mg/kg wet				
Vinyl Chloride	ND	0.0100	mg/kg wet				
Xylene O	ND	0.0050	mg/kg wet				
Xylene P,M	ND	0.0100	mg/kg wet				
Surrogate: 1,2-Dichloroethane-d4	0.0617		mg/kg wet	0.05000	123	70-130	
	0.0483		mg/kg wet	0.05000			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Batch CF12704 - 5035

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD		
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier	

5035/8260B Volatile Organic Com	ipounds / Low Leve	1
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Batch CF12704 - 5035						
urrogate: Dibromofluoromethane	0.0591		mg/kg wet	0.05000	118	70-130
jurrogate: Toluene-d8	0.0512		mg/kg wet	0.05000	102	70-130
CS						
.1,1,2-Tetrachloroethane	0.0522	0.0050	mg/kg wet	0.05000	104	70-130
,1,1-Trichloroethane	0.0537	0.0050	mg/kg wet	0.05000	107	70-130
1,2,2-Tetrachloroethane	0.0571	0.0050	mg/kg wet	0.05000	114	70-130
1,2-Trichloroethane	0.0545	0.0050	mg/kg wet	0.05000	109	70-130
1-Dichloroethane	0.0489	0.0050	mg/kg wet	0.05000	98	70-130
1-Dichloroethene	0.0528	0.0050	mg/kg wet	0.05000	106	70-130
1-Dichloropropene	0.0527	0.0050	mg/kg wet	0.05000	105	70-130
2,3-Trichlorobenzene	0.0545	0.0050	mg/kg wet	0.05000	109	70-130
	0.0556					
2,3-Trichloropropane		0.0050	mg/kg wet	0.05000	111	70-130
2,4-Trichlorobenzene	0.0532	0.0050	mg/kg wet	0.05000	106	70-130
2,4-Trimethylbenzene	0.0540	0.0050	mg/kg wet	0.05000	108	70-130
2-Dibromo-3-Chloropropane	0.0586	0.0050	mg/kg wet	0.05000	117	70-130
2-Dibromoethane	0.0568	0.0050	mg/kg wet	0.05000	114	70-130
2-Dichlorobenzene	0.0507	0.0050	mg/kg wet	0.05000	101	70-130
2-Dichloroethane	0.0549	0.0050	mg/kg wet	0.05000	110	70-130
2-Dichloropropane	0.0497	0.0050	mg/kg wet	0.05000	99	70-130
3,5-Trimethylbenzene	0.0550	0.0050	mg/kg wet	0.05000	110	70-130
3-Dichlorobenzene	0.0538	0.0050	mg/kg wet	0.05000	108	70-130
3-Dichloropropane	0.0574	0.0050	mg/kg wet	0.05000	115	70-130
1-Dichlorobenzene	0.0506	0.0050	mg/kg wet	0.05000	101	70-130
4-Dioxane	1.14	0.100	mg/kg wet	1.000	114	70-130
Chlorohexane	0.0567	0.0050	mg/kg wet	0.05000	113	70-130
2-Dichloropropane	0.0581	0.0050	mg/kg wet	0.05000	116	70-130
Butanone	0.299	0.0500	mg/kg wet	0.2500	120	70-130
-Chlorotoluene	0.0528	0.0050	mg/kg wet	0.05000	106	70-130
-Hexanone	0.302	0.0500	mg/kg wet	0.2500	121	70-130
-Chlorotoluene	0.0487	0.0050	mg/kg wet	0.05000	97	70-130
-Isopropyltoluene	0.0508	0.0050	mg/kg wet	0.05000	102	70-130
-Methyl-2-Pentanone	0.302	0.0500	mg/kg wet	0.2500	121	70-130
cetone	0.260	0.0500	mg/kg wet	0.2500	104	70-130
enzene	0.0510	0.0050	mg/kg wet	0.05000	102	70-130
romobenzene	0.0538	0.0050	mg/kg wet	0.05000	108	70-130
romochloromethane	0.0540	0.0050	mg/kg wet	0.05000	108	70-130
romodichloromethane	0.0546	0.0050	mg/kg wet	0.05000	109	70-130
omoform	0.0612	0.0050	mg/kg wet	0.05000	122	70-130
omomethane	0.0539	0.0100	mg/kg wet	0.05000	108	70-130
arbon Disulfide	0.0544	0.0050	mg/kg wet	0.05000	109	70-130
arbon Tetrachloride	0.0518	0.0050	mg/kg wet	0.05000	104	70-130
hlorobenzene	0.0533	0.0050	mg/kg wet	0.05000	107	70-130
hloroethane	0.0547	0.0100	mg/kg wet	0.05000	109	70-130
hloroform	0.0513	0.0050	mg/kg wet	0.05000	103	70-130
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CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

5035/8260B Volatile Organic Compounds / Low Level

Batch CF12704 - 5035									
Chloromethane	0.0548	0.0100	mg/kg wet	0.05000	110	70-130			
cis-1,2-Dichloroethene	0.0530	0.0050	mg/kg wet	0.05000	106	70-130			
cis-1,3-Dichloropropene	0.0474	0.0050	mg/kg wet	0.05000	95	70-130			
Dibromochloromethane	0.0590	0.0050	mg/kg wet	0.05000	118	70-130			
Dibromomethane	0.0524	0.0050	mg/kg wet	0.05000	105	70-130			
Dichlorodifluoromethane	0.0580	0.0100	mg/kg wet	0.05000	116	70-130			
Diethyl Ether	0.0363	0.0050	mg/kg wet	0.05000	73	70-130			
Di-isopropyl ether	0.0514	0.0050	mg/kg wet	0.05000	103	70-130			
Ethyl tertiary-butyl ether	0.0541	0.0050	mg/kg wet	0.05000	108	70-130			
Ethylbenzene	0.0551	0.0050	mg/kg wet	0.05000	110	70-130			
Hexachlorobutadiene	0.0536	0.0050	mg/kg wet	0.05000	107	70-130			
Sopropylbenzene	0.0470	0.0050	mg/kg wet	0.05000	94	70-130			
Methyl tert-Butyl Ether	0.0567	0.0050	mg/kg wet	0.05000	113	70-130			
Methylene Chloride	0.0530	0.0250	mg/kg wet	0.05000	106	70-130			
Naphthalene	0.0629	0.0050	mg/kg wet	0.05000	126	70-130			
n-Butylbenzene	0.0535	0.0050	mg/kg wet	0.05000	107	70-130			
n-Propylbenzene	0.0553	0.0050	mg/kg wet	0.05000	111	70-130			
sec-Butylbenzene	0.0543	0.0050	mg/kg wet	0.05000	109	70-130			
Styrene	0.0497	0.0050	mg/kg wet	0.05000	99	70-130			
tert-Butylbenzene	0.0530	0.0050	mg/kg wet	0.05000	106	70-130			
Tertiary-amyl methyl ether	0.0545	0.0050	mg/kg wet	0.05000	109	70-130			
Tetrachloroethene	0.0510	0.0050	mg/kg wet	0.05000	102	70-130			
Tetrahydrofuran	0.0571	0.0050	mg/kg wet	0.05000	114	70-130			
, Toluene	0.0550	0.0050	mg/kg wet	0.05000	110	70-130			
trans-1,2-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000	102	70-130			
trans-1,3-Dichloropropene	0.0456	0.0050	mg/kg wet	0.05000	91	70-130			
Trichloroethene	0.0509	0.0050	mg/kg wet	0.05000	102	70-130			
Vinyl Acetate	0.0602	0.0050	mg/kg wet			70-130			
, Vinyl Chloride	0.0634	0.0100	mg/kg wet	0.05000	127	70-130			
Xylene O	0.0552	0.0050	mg/kg wet	0.05000	110	70-130			
Xylene P,M	0.111	0.0100	mg/kg wet	0.1000	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0530		mg/kg wet	0.05000	106	70-130			
Surrogate: 4-Bromofluorobenzene	0.0529		mg/kg wet	0.05000	106	70-130			
Surrogate: Dibromofluoromethane	0.0500		mg/kg wet	0.05000	100	70-130			
Surrogate: Toluene-d8	0.0506		mg/kg wet	0.05000	101	70-130			
LCS Dup									
1,1,1,2-Tetrachloroethane	0.0492	0.0050	mg/kg wet	0.05000	98	70-130	6	25	
1,1,1-Trichloroethane	0.0500	0.0050	mg/kg wet	0.05000	100	70-130	7	25	
1,1,2,2-Tetrachloroethane	0.0526	0.0050	mg/kg wet	0.05000	100	70-130	8	25 25	
1,1,2-Trichloroethane	0.0495	0.0050	mg/kg wet	0.05000	99	70-130	10	25 25	
1,1-Dichloroethane	0.0493	0.0050	mg/kg wet	0.05000	99	70-130	4	25	
1,1-Dichloroethane 1,1-Dichloroethene	0.0469	0.0050		0.05000	100	70-130 70-130	5	25 25	
,		0.0050	mg/kg wet	0.05000	100	70-130 70-130	5 4	25 25	
1,1-Dichloropropene	0.0508	0.0050	mg/kg wet	0.05000	102	/0-130	4	25	

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1,2,3-Trichlorobenzene

1,2,3-Trichloropropane

0.0526

0.0559

0.0050

0.0050

mg/kg wet Tel: 401-461-7181

mg/kg wet

Fax: 401-461-4486

105

112

70-130

70-130

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4

25

0.05000



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CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

5035/8260B Volatile Organic Compounds / Low Level

Batch CF12704 - 5035									
1,2,4-Trichlorobenzene	0.0513	0.0050	mg/kg wet	0.05000	103	70-130	4	25	
1,2,4-Trimethylbenzene	0.0553	0.0050	mg/kg wet	0.05000	111	70-130	2	25	
1,2-Dibromo-3-Chloropropane	0.0523	0.0050	mg/kg wet	0.05000	105	70-130	11	25	
1,2-Dibromoethane	0.0532	0.0050	mg/kg wet	0.05000	106	70-130	6	25	
1,2-Dichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000	100	70-130	1	25	
1,2-Dichloroethane	0.0508	0.0050	mg/kg wet	0.05000	102	70-130	8	25	
1,2-Dichloropropane	0.0476	0.0050	mg/kg wet	0.05000	95	70-130	4	25	
1,3,5-Trimethylbenzene	0.0554	0.0050	mg/kg wet	0.05000	111	70-130	0.8	25	
1,3-Dichlorobenzene	0.0521	0.0050	mg/kg wet	0.05000	104	70-130	3	25	
1,3-Dichloropropane	0.0518	0.0050	mg/kg wet	0.05000	104	70-130	10	25	
1,4-Dichlorobenzene	0.0507	0.0050	mg/kg wet	0.05000	101	70-130	0.1	25	
1,4-Dioxane	0.997	0.100	mg/kg wet	1.000	100	70-130	13	20	
1-Chlorohexane	0.0570	0.0050	mg/kg wet	0.05000	114	70-130	0.6	25	
2,2-Dichloropropane	0.0537	0.0050	mg/kg wet	0.05000	107	70-130	8	25	
2-Butanone	0.259	0.0500	mg/kg wet	0.2500	104	70-130	14	25	
2-Chlorotoluene	0.0532	0.0050	mg/kg wet	0.05000	106	70-130	0.8	25	
2-Hexanone	0.246	0.0500	mg/kg wet	0.2500	99	70-130	20	25	
4-Chlorotoluene	0.0484	0.0050	mg/kg wet	0.05000	97	70-130	0.7	25	
4-Isopropyltoluene	0.0512	0.0050	mg/kg wet	0.05000	102	70-130	0.8	25	
4-Methyl-2-Pentanone	0.257	0.0500	mg/kg wet	0.2500	103	70-130	16	25	
Acetone	0.199	0.0500	mg/kg wet	0.2500	80	70-130	27	25	D+
Benzene	0.0485	0.0050	mg/kg wet	0.05000	97	70-130	5	25	
Bromobenzene	0.0528	0.0050	mg/kg wet	0.05000	106	70-130	2	25	
Bromochloromethane	0.0494	0.0050	mg/kg wet	0.05000	99	70-130	9	25	
Bromodichloromethane	0.0515	0.0050	mg/kg wet	0.05000	103	70-130	6	25	
Bromoform	0.0539	0.0050	mg/kg wet	0.05000	108	70-130	13	25	
Bromomethane	0.0542	0.0100	mg/kg wet	0.05000	108	70-130	0.6	25	
Carbon Disulfide	0.0532	0.0050	mg/kg wet	0.05000	106	70-130	2	25	
Carbon Tetrachloride	0.0500	0.0050	mg/kg wet	0.05000	100	70-130	4	25	
Chlorobenzene	0.0515	0.0050	mg/kg wet	0.05000	103	70-130	3	25	
Chloroethane	0.0517	0.0100	mg/kg wet	0.05000	103	70-130	6	25	
Chloroform	0.0490	0.0050	mg/kg wet	0.05000	98	70-130	5	25	
Chloromethane	0.0551	0.0100	mg/kg wet	0.05000	110	70-130	0.7	25	
cis-1,2-Dichloroethene	0.0526	0.0050	mg/kg wet	0.05000	105	70-130	0.9	25	
cis-1,3-Dichloropropene	0.0465	0.0050	mg/kg wet	0.05000	93	70-130	2	25	
Dibromochloromethane	0.0534	0.0050	mg/kg wet	0.05000	107	70-130	10	25	
Dibromomethane	0.0484	0.0050	mg/kg wet	0.05000	97	70-130	8	25	
Dichlorodifluoromethane	0.0549	0.0100	mg/kg wet	0.05000	110	70-130	5	25	
Diethyl Ether	0.0347	0.0050	mg/kg wet	0.05000	69	70-130	4	25	B-
Di-isopropyl ether	0.0487	0.0050	mg/kg wet	0.05000	97	70-130	5	25	
Ethyl tertiary-butyl ether	0.0494	0.0050	mg/kg wet	0.05000	99	70-130	9	25	
Ethylbenzene	0.0536	0.0050	mg/kg wet	0.05000	107	70-130	3	25	
Hexachlorobutadiene	0.0518	0.0050	mg/kg wet	0.05000	104	70-130	3	25	
Isopropylbenzene	0.0474	0.0050	mg/kg wet	0.05000	95	70-130	0.8	25	

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The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

5035/8260B Volatile Organic Compounds / Low Level

Batch CF12704 - 5035								
Methylene Chloride	0.0498	0.0250	mg/kg wet	0.05000	100	70-130	6	25
Naphthalene	0.0581	0.0050	mg/kg wet	0.05000	116	70-130	8	25
n-Butylbenzene	0.0544	0.0050	mg/kg wet	0.05000	109	70-130	2	25
n-Propylbenzene	0.0554	0.0050	mg/kg wet	0.05000	111	70-130	0.2	25
sec-Butylbenzene	0.0551	0.0050	mg/kg wet	0.05000	110	70-130	1	25
Styrene	0.0493	0.0050	mg/kg wet	0.05000	99	70-130	0.9	25
rert-Butylbenzene	0.0532	0.0050	mg/kg wet	0.05000	106	70-130	0.5	25
Fertiary-amyl methyl ether	0.0492	0.0050	mg/kg wet	0.05000	98	70-130	10	25
Tetrachloroethene	0.0503	0.0050	mg/kg wet	0.05000	101	70-130	1	25
Tetrahydrofuran	0.0530	0.0050	mg/kg wet	0.05000	106	70-130	7	25
Toluene	0.0530	0.0050	mg/kg wet	0.05000	106	70-130	4	25
rans-1,2-Dichloroethene	0.0475	0.0050	mg/kg wet	0.05000	95	70-130	7	25
rans-1,3-Dichloropropene	0.0423	0.0050	mg/kg wet	0.05000	85	70-130	8	25
Trichloroethene	0.0485	0.0050	mg/kg wet	0.05000	97	70-130	5	25
Vinyl Acetate	0.0537	0.0050	mg/kg wet			70-130		25
Vinyl Chloride	0.0617	0.0100	mg/kg wet	0.05000	123	70-130	3	25
Kylene O	0.0526	0.0050	mg/kg wet	0.05000	105	70-130	5	25
Kylene P,M	0.107	0.0100	mg/kg wet	0.1000	107	70-130	3	25
Surrogate: 1,2-Dichloroethane-d4	0.0480		mg/kg wet	0.05000	96	70-130		
Surrogate: 4-Bromofluorobenzene	0.0505		mg/kg wet	0.05000	101	70-130		
Surrogate: Dibromofluoromethane	0.0482		mg/kg wet	0.05000	96	70-130		
Surrogate: Toluene-d8	0.0505		mg/kg wet	0.05000	101	70-130		

8081A Organochlorine Pesticides

Batch CF12723 - 3546

Batch CF12/23 - 3540			
Blank			
4,4´-DDD	ND	0.0025	mg/kg wet
4,4'-DDD [2C]	ND	0.0025	mg/kg wet
4,4´-DDE	ND	0.0025	mg/kg wet
4,4'-DDE [2C]	ND	0.0025	mg/kg wet
4,4´-DDT	ND	0.0025	mg/kg wet
4,4'-DDT [2C]	ND	0.0025	mg/kg wet
Aldrin	ND	0.0025	mg/kg wet
Aldrin [2C]	ND	0.0025	mg/kg wet
alpha-BHC	ND	0.0025	mg/kg wet
alpha-BHC [2C]	ND	0.0025	mg/kg wet
alpha-Chlordane	ND	0.0025	mg/kg wet
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet
beta-BHC	ND	0.0025	mg/kg wet
beta-BHC [2C]	ND	0.0025	mg/kg wet
Chlordane (Total)	ND	0.0300	mg/kg wet
Chlordane (Total) [2C]	ND	0.0300	mg/kg wet
delta-BHC	ND	0.0025	mg/kg wet
delta-BHC [2C]	ND	0.0025	mg/kg wet
Dieldrin	ND	0.0025	mg/kg wet

185 Frances Avenue, Cranston, RI 02910-2211

2211 Tel: 401-461-7181
Dependability ◆ Quality

Fax: 401-461-4486 ◆ Service



The Microbiology Division of Thielsch Engineering, Inc.



RPD

CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

%REC

Quality Control Data

Spike

Source

Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
		8081A O	rganochlorin	ne Pestici	des					
Batch CF12723 - 3546										
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
ndosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
ndrin	ND	0.0025	mg/kg wet							
ndrin [2C]	ND	0.0025	mg/kg wet							
ndrin Aldehyde	ND	0.0025	mg/kg wet							
ndrin Aldehyde [2C]	ND	0.0025	mg/kg wet							
ndrin Ketone	ND	0.0025	mg/kg wet							
indrin Ketone [2C]	ND	0.0025	mg/kg wet							
amma-BHC (Lindane)	ND	0.0015	mg/kg wet							
amma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
amma-Chlordane	ND	0.0025	mg/kg wet							
amma-Chlordane [2C]	ND	0.0025	mg/kg wet							
leptachlor	ND	0.0025	mg/kg wet							
leptachlor [2C]	ND	0.0025	mg/kg wet							
leptachlor Epoxide	ND	0.0025	mg/kg wet							
leptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
	ND	0.0025	mg/kg wet							
lexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
1ethoxychlor	ND	0.0025	mg/kg wet							
Nethoxychlor [2C]	ND	0.0025	mg/kg wet							
Foxaphene	ND	0.125	mg/kg wet							
Foxaphene [2C]	ND	0.125	mg/kg wet							
(SAB)	110	0.125								
Gurrogate: Decachlorobiphenyl	0.0108		mg/kg wet	0.01250		87	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0109		mg/kg wet	0.01250		87	30-150			
Surrogate: Tetrachloro-m-xylene	0.00932		mg/kg wet	0.01250		<i>75</i>	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0102		mg/kg wet	0.01250		81	30-150			
cs										
,4´-DDD	0.0139	0.0025	mg/kg wet	0.01250		111	40-140			
,4'-DDD [2C]	0.0135	0.0025	mg/kg wet	0.01250		108	40-140			
1,4´-DDE	0.0147	0.0025	mg/kg wet	0.01250		118	40-140			
1,4´-DDE [2C]	0.0134	0.0025	mg/kg wet	0.01250		107	40-140			
,4´-DDT	0.0136	0.0025	mg/kg wet	0.01250		109	40-140			
,4´-DDT [2C]	0.0136	0.0025	mg/kg wet	0.01250		108	40-140			
Aldrin	0.0133	0.0025	mg/kg wet	0.01250		107	40-140			
	0.0132	0.0025	mg/kg wet	0.01250		106	40-140			
Ndrin [2C]										
ldrin [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140			
ldrin [2C] Ipha-BHC	0.0129		mg/kg wet mg/kg wet							
		0.0025 0.0025 0.0025	mg/kg wet mg/kg wet mg/kg wet	0.01250 0.01250 0.01250		103 106 107	40-140 40-140 40-140			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

			_	Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
		8081A O	rganochlorir	ne Pestici	des					
D-1-1- 0742722 2746										
Batch CF12723 - 3546 beta-BHC	0.0139	0.0025	mg/kg wet	0.01250		112	40-140			
beta-BHC [2C]	0.0139	0.0025	mg/kg wet	0.01250		113	40-140			
delta-BHC	0.0132	0.0025	mg/kg wet	0.01250		105	40-140			
delta-BHC [2C]	0.0132	0.0025	mg/kg wet	0.01250		107	40-140			
Dieldrin	0.0137	0.0025	mg/kg wet	0.01250		110	40-140			
Dieldrin [2C]	0.0136	0.0025	mg/kg wet	0.01250		108	40-140			
Endosulfan I	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
Endosulfan I [2C]	0.0133	0.0025	mg/kg wet	0.01250		106	40-140			
Endosulfan II	0.0137	0.0025	mg/kg wet	0.01250		110	40-140			
Endosulfan II [2C]	0.0136	0.0025	mg/kg wet	0.01250		109	40-140			
Endosulfan Sulfate	0.0137	0.0025	mg/kg wet	0.01250		110	40-140			
Endosulfan Sulfate [2C]	0.0139	0.0025	mg/kg wet	0.01250		111	40-140			
Endrin	0.0148	0.0025	mg/kg wet	0.01250		119	40-140			
Endrin [2C]	0.0147	0.0025	mg/kg wet	0.01250		118	40-140			
Endrin Aldehyde	0.0134	0.0025	mg/kg wet	0.01250		107	40-140			
Endrin Aldehyde [2C]	0.0137	0.0025	mg/kg wet	0.01250		110	40-140			
Endrin Ketone	0.0126	0.0025	mg/kg wet	0.01250		100	40-140			
Endrin Ketone [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140			
gamma-BHC (Lindane)	0.0134	0.0015	mg/kg wet	0.01250		107	40-140			
gamma-BHC (Lindane) [2C]	0.0135	0.0015	mg/kg wet	0.01250		108	40-140			
gamma-Chlordane	0.0132	0.0025	mg/kg wet	0.01250		106	40-140			
gamma-Chlordane [2C]	0.0133	0.0025	mg/kg wet	0.01250		106	40-140			
Heptachlor	0.0130	0.0025	mg/kg wet	0.01250		104	40-140			
Heptachlor [2C]	0.0131	0.0025	mg/kg wet	0.01250		105	40-140			
Heptachlor Epoxide	0.0134	0.0025	mg/kg wet	0.01250		107	40-140			
Heptachlor Epoxide [2C]	0.0133	0.0025	mg/kg wet	0.01250		107	40-140			
Hexachlorobenzene	0.0173	0.0025	mg/kg wet	0.01250		138	40-140			
Hexachlorobenzene [2C]	0.0175	0.0025	mg/kg wet	0.01250		140	40-140			
Methoxychlor	0.0132	0.0025	mg/kg wet	0.01250		105	40-140			
Methoxychlor [2C]	0.0141	0.0025	mg/kg wet	0.01250		113	40-140			
Surrogate: Decachlorobiphenyl	0.0116		mg/kg wet	0.01250		93	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0116		mg/kg wet	0.01250		93	30-150			
Surrogate: Tetrachloro-m-xylene	0.0121		mg/kg wet	0.01250		97	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0127		mg/kg wet	0.01250		101	30-150			
LCS Dup										
4,4´-DDD	0.0128	0.0025	mg/kg wet	0.01250		102	40-140	8	30	
4,4´-DDD [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	7	30	
4,4´-DDE	0.0131	0.0025	mg/kg wet	0.01250		105	40-140	12	30	
4,4´-DDE [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140	10	30	
4,4´-DDT	0.0127	0.0025	mg/kg wet	0.01250		101	40-140	7	30	
4,4´-DDT [2C]	0.0126	0.0025	mg/kg wet	0.01250		100	40-140	8	30	
Aldrin	0.0117	0.0025	mg/kg wet	0.01250		94	40-140	13	30	
Aldrin [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	13	30	
alpha-BHC	0.0113	0.0025	mg/kg wet	0.01250		90	40-140	13	30	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifie
- 1			rganochlorir							
		0001A O	- gariocriiorii	ic i coucil	uco					
3atch CF12723 - 3546										
alpha-BHC [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	14	30	
alpha-Chlordane	0.0121	0.0025	mg/kg wet	0.01250		97	40-140	10	30	
alpha-Chlordane [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140	10	30	
peta-BHC	0.0123	0.0025	mg/kg wet	0.01250		99	40-140	12	30	
eta-BHC [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	13	30	
lelta-BHC	0.0118	0.0025	mg/kg wet	0.01250		94	40-140	11	30	
elta-BHC [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	11	30	
Dieldrin	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	9	30	
Dieldrin [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	9	30	
ndosulfan I	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	8	30	
indosulfan I [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140	10	30	
indosulfan II	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	6	30	
indosulfan II [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	6	30	
indosulfan Sulfate	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	6	30	
ndosulfan Sulfate [2C]	0.0131	0.0025	mg/kg wet	0.01250		105	40-140	6	30	
ndrin	0.0136	0.0025	mg/kg wet	0.01250		109	40-140	9	30	
indrin [2C]	0.0134	0.0025	mg/kg wet	0.01250		108	40-140	9	30	
ndrin Aldehyde	0.0123	0.0025	mg/kg wet	0.01250		99	40-140	8	30	
ndrin Aldehyde [2C]	0.0123	0.0025	mg/kg wet	0.01250		99	40-140	11	30	
ndrin Ketone	0.0119	0.0025	mg/kg wet	0.01250		96	40-140	5	30	
ndrin Ketone [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	5	30	
amma-BHC (Lindane)	0.0117	0.0015	mg/kg wet	0.01250		94	40-140	13	30	
jamma-BHC (Lindane) [2C]	0.0118	0.0015	mg/kg wet	0.01250		94	40-140	13	30	
amma-Chlordane	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	9	30	
jamma-Chlordane [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	10	30	
Heptachlor	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	13	30	
· leptachlor [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	13	30	
Heptachlor Epoxide	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	11	30	
leptachlor Epoxide [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	11	30	
Hexachlorobenzene	0.0151	0.0025	mg/kg wet	0.01250		121	40-140	13	30	
lexachlorobenzene [2C]	0.0153	0.0025	mg/kg wet	0.01250		122	40-140	14	30	
1ethoxychlor	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	6	30	
1ethoxychlor [2C]	0.0127	0.0025	mg/kg wet	0.01250		101	40-140	11	30	
/										
Surrogate: Decachlorobiphenyl	0.0110		mg/kg wet	0.01250		88	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0111		mg/kg wet	0.01250		89	30-150			
Surrogate: Tetrachloro-m-xylene	0.0105		mg/kg wet	0.01250		84	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0111		mg/kg wet	0.01250		89	30-150			

Batch CF12424 - 3540					
Blank					
Aroclor 1016	ND	0.0500	mg/kg wet		
Aroclor 1221	ND	0.0500	mg/kg wet		
Aroclor 1232	ND	0.0500	mg/kg wet		



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
		8082 Polyc	hlorinated B	iphenyls ((PCB)					
Batch CF12424 - 3540										
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
roclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0241		mg/kg wet	0.02500		97	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0230		mg/kg wet	0.02500		92	30-150			
Surrogate: Tetrachloro-m-xylene	0.0221		mg/kg wet	0.02500		89	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0233		mg/kg wet	0.02500		93	30-150			
.cs								_		
Aroclor 1016	0.462	0.0500	mg/kg wet	0.5000		92	40-140			
Aroclor 1260	0.461	0.0500	mg/kg wet	0.5000		92	40-140			
Surrogate: Decachlorobiphenyl	0.0247		mg/kg wet	0.02500		99	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0236		mg/kg wet	0.02500		95	30-150			
Surrogate: Tetrachloro-m-xylene	0.0228		mg/kg wet	0.02500		91	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0226		mg/kg wet	0.02500		91	30-150			
.CS Dup										
roclor 1016	0.470	0.0500	mg/kg wet	0.5000		94	40-140	2	50	
roclor 1260	0.474	0.0500	mg/kg wet	0.5000		95	40-140	3	50	
	0.0251		ma/ka wot	0.02500		100	30-150			
Surrogate: Decachlorobiphenyl	0.0231		mg/kg wet	0.02500		96	30-150 30-150			
Surrogate: Decachlorobiphenyl [2C]			mg/kg wet							
Surrogate: Tetrachloro-m-xylene	0.0222 0.0220		mg/kg wet mg/kg wet	0.02500 0.02500		89 88	30-150 30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0220	8100M Tot	al Petroleum		rbons	00	30-130			
Batch CF12918 - 3546										
Slank	ND	0.2	ma/ka wat							
Decane (C10)		0.2	mg/kg wet							
Docosane (C22)	ND		mg/kg wet							
Oodecane (C12)	ND	0.2	mg/kg wet							
cicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
lonadecane (C19)	ND	0.2	mg/kg wet							
lonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
etracosane (C24)	ND	0.2	mg/kg wet							
etradecane (C14)	ND	0.2	mg/kg wet							
otal Petroleum Hydrocarbons	ND	37.5	mg/kg wet							

185 Frances Avenue, Cranston, RI 02910-2211

Triacontane (C30)

Tel: 401-461-7181

mg/kg wet

Quality

0.2

Dependability

Fax: 401-461-4486 ◆ Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Batch CF12918 - 3546

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Surrogate: O-Terphenyl		5.17		mg/kg wet	5.000		103	40-140			
LCS											
Decane (C10)		1.6	0.2	mg/kg wet	2.500		64	40-140			
Docosane (C22)		2.1	0.2	mg/kg wet	2.500		84	40-140			
Dodecane (C12)		1.8	0.2	mg/kg wet	2.500		72	40-140			
Eicosane (C20)		2.2	0.2	mg/kg wet	2.500		86	40-140			
Hexacosane (C26)		2.2	0.2	mg/kg wet	2.500		88	40-140			
Hexadecane (C16)		2.0	0.2	mg/kg wet	2.500		82	40-140			
Nonadecane (C19)		2.1	0.2	mg/kg wet	2.500		83	40-140			
Nonane (C9)		1.3	0.2	mg/kg wet	2.500		51	30-140			
Octacosane (C28)		2.2	0.2	mg/kg wet	2.500		88	40-140			
Octadecane (C18)		2.1	0.2	mg/kg wet	2.500		85	40-140			
Tetracosane (C24)		2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetradecane (C14)		1.9	0.2	mg/kg wet	2.500		78	40-140			
Total Petroleum Hydroca	arbons	30.0	37.5	mg/kg wet	35.00		86	40-140			
Triacontane (C30)		2.2	0.2	mg/kg wet	2.500		88	40-140			
Surrogate: O-Terphenyl		4.57		mg/kg wet	5.000		91	40-140			
.CS Dup											
Decane (C10)		2.0	0.2	mg/kg wet	2.500		78	40-140	21	50	
Docosane (C22)		2.4	0.2	mg/kg wet	2.500		98	40-140	15	50	
Dodecane (C12)		2.2	0.2	mg/kg wet	2.500		86	40-140	18	50	
Eicosane (C20)		2.5	0.2	mg/kg wet	2.500		100	40-140	15	50	
Hexacosane (C26)		2.6	0.2	mg/kg wet	2.500		103	40-140	16	50	
Hexadecane (C16)		2.4	0.2	mg/kg wet	2.500		95	40-140	15	50	
Nonadecane (C19)		2.4	0.2	mg/kg wet	2.500		96	40-140	15	50	
Nonane (C9)		1.6	0.2	mg/kg wet	2.500		65	30-140	23	50	
Octacosane (C28)		2.6	0.2	mg/kg wet	2.500		104	40-140	16	50	
Octadecane (C18)		2.5	0.2	mg/kg wet	2.500		99	40-140	15	50	
Tetracosane (C24)		2.6	0.2	mg/kg wet	2.500		103	40-140	15	50	
Tetradecane (C14)		2.2	0.2	mg/kg wet	2.500		90	40-140	14	50	
Total Petroleum Hydroca	arbons	34.7	37.5	mg/kg wet	35.00		99	40-140	15	50	
Triacontane (C30)		2.6	0.2	mg/kg wet	2.500		104	40-140	17	50	
Surrogate: O-Terphenyl		5.25		mg/kg wet	5.000		105	40-140			
Matrix Spike	Source: 1106301-01										
Decane (C10)		2.1	0.2	mg/kg dry	2.707	ND	79	40-140			
Docosane (C22)		2.7	0.2	mg/kg dry	2.707	ND	98	40-140			
Dodecane (C12)		2.4	0.2	mg/kg dry	2.707	ND	88	40-140			
Eicosane (C20)		2.8	0.2	mg/kg dry	2.707	ND	102	40-140			
Hexacosane (C26)		2.8	0.2	mg/kg dry	2.707	ND	104	40-140			
Hexadecane (C16)		2.6	0.2	mg/kg dry	2.707	ND	97	40-140			
Nonadecane (C19)		2.6	0.2	mg/kg dry	2.707	ND	98	40-140			
Nonane (C9)		1.7	0.2	mg/kg dry	2.707	ND	64	30-140			
Octacosane (C28)		2.9	0.2	mg/kg dry	2.707	ND	105	40-140			

Dependability

Quality

Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

A1-4-	Danille	MDI	l lastes	Spike	Source	0/ DEC	%REC	DDD	RPD	0150
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
		8100M Tot	al Petroleum	Hydroca	irbons					
Batch CF12918 - 3546										
Octadecane (C18)	2.8	0.2	mg/kg dry	2.707	ND	104	40-140			
Tetracosane (C24)	2.8	0.2	mg/kg dry	2.707	ND	104	40-140			
Tetradecane (C14)	2.5	0.2	mg/kg dry	2.707	ND	91	40-140			
Total Petroleum Hydrocarbons	112	40.6	mg/kg dry	37.89	75.4	96	40-140			
Triacontane (C30)	2.9	0.2	mg/kg dry	2.707	ND	108	40-140			
Surrogate: O-Terphenyl	5.80		mg/kg dry	5.413		107	40-140			
Matrix Spike Dup Source: 1106301-01										
Decane (C10)	2.2	0.2	mg/kg dry	2.747	ND	79	40-140	1	50	
Docosane (C22)	2.8	0.2	mg/kg dry	2.747	ND	103	40-140	6	50	
Dodecane (C12)	2.5	0.2	mg/kg dry	2.747	ND	89	40-140	3	50	
Eicosane (C20)	2.9	0.2	mg/kg dry	2.747	ND	105	40-140	5	50	
Hexacosane (C26)	3.1	0.2	mg/kg dry	2.747	ND	111	40-140	8	50	
Hexadecane (C16)	2.7	0.2	mg/kg dry	2.747	ND	99	40-140	3	50	
Nonadecane (C19)	2.8	0.2	mg/kg dry	2.747	ND	101	40-140	4	50	
Nonane (C9)	1.7	0.2	mg/kg dry	2.747	ND	62	30-140	3	50	
Octacosane (C28)	3.0	0.2	mg/kg dry	2.747	ND	111	40-140	6	50	
Octadecane (C18)	2.9	0.2	mg/kg dry	2.747	ND	106	40-140	3	50	
Tetracosane (C24)	3.0	0.2	mg/kg dry	2.747	ND	109	40-140	6	50	
Tetradecane (C14)	2.6	0.2	mg/kg dry	2.747	ND	93	40-140	4	50	
Total Petroleum Hydrocarbons	149	41.2	mg/kg dry	38.46	75.4	191	40-140	28	50	M+
Triacontane (C30)	3.1	0.2	mg/kg dry	2.747	ND	114	40-140	6	50	
Surrogate: O-Terphenyl	6.04		mg/kg dry	5.495		110	40-140			

8270C Semi-Volatile Organic Compounds

Batch CF12724 - 3546			
Blank			
1,1-Biphenyl	ND	0.333	mg/kg wet
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet
1,2-Dichlorobenzene	ND	0.333	mg/kg wet
1,3-Dichlorobenzene	ND	0.333	mg/kg wet
1,4-Dichlorobenzene	ND	0.333	mg/kg wet
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet
2,4-Dichlorophenol	ND	0.333	mg/kg wet
2,4-Dimethylphenol	ND	0.333	mg/kg wet
2,4-Dinitrophenol	ND	1.67	mg/kg wet
2,4-Dinitrotoluene	ND	0.333	mg/kg wet
2,6-Dinitrotoluene	ND	0.333	mg/kg wet
2-Chloronaphthalene	ND	0.333	mg/kg wet
2-Chlorophenol	ND	0.333	mg/kg wet
2-Methylnaphthalene	ND	0.333	mg/kg wet
2-Methylphenol	ND	0.333	mg/kg wet

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Dependability ◆ Quality

Fax: 401-461-4486



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

8270C Semi-Volatile Organic Compounds

Batch CF12724 - 3546			
2-Nitroaniline	ND	0.333	mg/kg wet
2-Nitrophenol	ND	0.333	mg/kg wet
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet
3+4-Methylphenol	ND	0.667	mg/kg wet
3-Nitroaniline	ND	0.333	mg/kg wet
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet
4-Chloroaniline	ND	0.667	mg/kg wet
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet
4-Nitroaniline	ND	0.333	mg/kg wet
4-Nitrophenol	ND	1.67	mg/kg wet
Acenaphthene	ND	0.333	mg/kg wet
Acenaphthylene	ND	0.333	mg/kg wet
Acetophenone	ND	0.667	mg/kg wet
Aniline	ND	0.667	mg/kg wet
Anthracene	ND	0.333	mg/kg wet
Azobenzene	ND	0.333	mg/kg wet
Benzo(a)anthracene	ND	0.333	mg/kg wet
Benzo(a)pyrene	ND	0.167	mg/kg wet
Benzo(b)fluoranthene	ND	0.333	mg/kg wet
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet
Benzo(k)fluoranthene	ND	0.333	mg/kg wet
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	ND	0.333	mg/kg wet
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet
Butylbenzylphthalate	ND	0.333	mg/kg wet
Carbazole	ND	0.333	mg/kg wet
Chrysene	ND	0.167	mg/kg wet
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet
Dibenzofuran	ND	0.333	mg/kg wet
Diethylphthalate	ND	0.333	mg/kg wet
Dimethylphthalate	ND	0.333	mg/kg wet
Di-n-butylphthalate	ND	0.333	mg/kg wet
Di-n-octylphthalate	ND	0.333	mg/kg wet
Fluoranthene	ND	0.333	mg/kg wet
Fluorene	ND	0.333	mg/kg wet
Hexachlorobenzene	ND	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet
Hexachloroethane	ND	0.333	mg/kg wet
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet



BAL Laboratory

The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

Batch CF12724 - 3546

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

8270C Semi-Volatile Organic Compounds

Datcii Cr12/24 - 3340						
Isophorone	ND	0.333	mg/kg wet			
Naphthalene	ND	0.333	mg/kg wet			
Nitrobenzene	ND	0.333	mg/kg wet			
N-Nitrosodimethylamine	ND	0.333	mg/kg wet			
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet			
N-nitrosodiphenylamine	ND	0.333	mg/kg wet			
Pentachlorophenol	ND	1.67	mg/kg wet			
Phenanthrene	ND	0.333	mg/kg wet			
Phenol	ND	0.333	mg/kg wet			
Pyrene	ND	0.333	mg/kg wet			
Pyridine	ND	1.67	mg/kg wet			
Surrogate: 1,2-Dichlorobenzene-d4	2.25		mg/kg wet	3.333	68	30-130
Surrogate: 2,4,6-Tribromophenol	3.40		mg/kg wet	5.000	68	30-130
Surrogate: 2-Chlorophenol-d4	2.98		mg/kg wet	5.000	60	30-130
Surrogate: 2-Fluorobiphenyl	2.27		mg/kg wet	3.333	68	30-130
Surrogate: 2-Fluorophenol	2.94		mg/kg wet	5.000	59	30-130
Surrogate: Nitrobenzene-d5	2.28		mg/kg wet	3.333	68	30-130
Surrogate: Phenol-d6	2.99		mg/kg wet	5.000	60	30-130
Surrogate: p-Terphenyl-d14	2.42		mg/kg wet	3.333	<i>73</i>	30-130
ıcs						
1,1-Biphenyl	3.01	0.333	mg/kg wet	3.333	90	40-140
1,2,4-Trichlorobenzene	2.77	0.333	mg/kg wet	3.333	83	40-140
1,2-Dichlorobenzene	2.84	0.333	mg/kg wet	3.333	85	40-140
1,3-Dichlorobenzene	2.81	0.333	mg/kg wet	3.333	84	40-140
1,4-Dichlorobenzene	2.81	0.333	mg/kg wet	3.333	84	40-140
2,3,4,6-Tetrachlorophenol	3.28	1.67	mg/kg wet	3.333	99	30-130
2,4,5-Trichlorophenol	3.26	0.333	mg/kg wet	3.333	98	30-130
2,4,6-Trichlorophenol	3.26	0.333	mg/kg wet	3.333	98	30-130
2,4-Dichlorophenol	3.18	0.333	mg/kg wet	3.333	95	30-130
2,4-Dimethylphenol	3.02	0.333	mg/kg wet	3.333	90	30-130
2,4-Dinitrophenol	3.23	1.67	mg/kg wet	3.333	97	30-130
2,4-Dinitrotoluene	3.39	0.333	mg/kg wet	3.333	102	40-140
2,6-Dinitrotoluene	3.27	0.333	mg/kg wet	3.333	98	40-140
2-Chloronaphthalene	2.59	0.333	mg/kg wet	3.333	78	40-140
2-Chlorophenol	2.93	0.333	mg/kg wet	3.333	88	30-130
2-Methylnaphthalene	3.06	0.333	mg/kg wet	3.333	92	40-140
2-Methylphenol	3.08	0.333	mg/kg wet	3.333	92	30-130
2-Nitroaniline	3.22	0.333	mg/kg wet	3.333	97	40-140
2-Nitrophenol	3.02	0.333	mg/kg wet	3.333	90	30-130
3,3´-Dichlorobenzidine	1.85	0.667	mg/kg wet	2.400	77	40-140
3+4-Methylphenol	5.84	0.667	mg/kg wet	6.667	88	30-130
3-Nitroaniline	3.15	0.333	mg/kg wet	3.333	94	40-140
4,6-Dinitro-2-Methylphenol	3.32	1.67	mg/kg wet	3.333	100	30-130
4-Bromophenyl-phenylether	3.13	0.333	mg/kg wet	3.333	94	40-140
4-Chloro-3-Methylphenol	3.26	0.333	mg/kg wet	3.333	98	30-130
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The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

8270C Semi-Volatile Organic Compounds

Batch CF12724 - 3546							
4-Chloroaniline	2.56	0.667	mg/kg wet	3.333	77	40-140	
4-Chloro-phenyl-phenyl ether	3.14	0.333	mg/kg wet	3.333	94	40-140	
4-Nitroaniline	3.23	0.333	mg/kg wet	3.333	97	40-140	
4-Nitrophenol	3.20	1.67	mg/kg wet	3.333	96	30-130	
Acenaphthene	3.62	0.333	mg/kg wet	3.333	109	40-140	
Acenaphthylene	2.94	0.333	mg/kg wet	3.333	88	40-140	
Acetophenone	3.10	0.667	mg/kg wet	3.333	93	40-140	
Aniline	2.39	0.667	mg/kg wet	3.333	72	40-140	
anthracene	3.68	0.333	mg/kg wet	3.333	110	40-140	
zobenzene	2.92	0.333	mg/kg wet	3.333	87	40-140	
Benzo(a)anthracene	3.68	0.333	mg/kg wet	3.333	111	40-140	
enzo(a)pyrene	3.60	0.167	mg/kg wet	3.333	108	40-140	
enzo(b)fluoranthene	3.43	0.333	mg/kg wet	3.333	103	40-140	
enzo(g,h,i)perylene	3.55	0.333	mg/kg wet	3.333	107	40-140	
Benzo(k)fluoranthene	3.44	0.333	mg/kg wet	3.333	103	40-140	
enzoic Acid	2.83	1.67	mg/kg wet	3.333	85	40-140	
enzyl Alcohol	2.91	0.333	mg/kg wet	3.333	87	40-140	
is(2-Chloroethoxy)methane	2.94	0.333	mg/kg wet	3.333	88	40-140	
is(2-Chloroethyl)ether	2.88	0.333	mg/kg wet	3.333	86	40-140	
is(2-chloroisopropyl)Ether	2.97	0.333	mg/kg wet	3.333	89	40-140	
is(2-Ethylhexyl)phthalate	3.23	0.333	mg/kg wet	3.333	97	40-140	
utylbenzylphthalate	3.15	0.333	mg/kg wet	3.333	95	40-140	
arbazole	3.29	0.333	mg/kg wet	3.333	99	40-140	
hrysene	3.86	0.167	mg/kg wet	3.333	116	40-140	
Dibenzo(a,h)Anthracene	3.57	0.167	mg/kg wet	3.333	107	40-140	
ibenzofuran	3.07	0.333	mg/kg wet	3.333	92	40-140	
Piethylphthalate	3.19	0.333	mg/kg wet	3.333	96	40-140	
imethylphthalate	3.20	0.333	mg/kg wet	3.333	96	40-140	
i-n-butylphthalate	3.12	0.333	mg/kg wet	3.333	94	40-140	
Di-n-octylphthalate	3.13	0.333	mg/kg wet	3.333	94	40-140	
luoranthene	3.23	0.333	mg/kg wet	3.333	97	40-140	
luorene	3.71	0.333	mg/kg wet	3.333	111	40-140	
lexachlorobenzene	3.14	0.167	mg/kg wet	3.333	94	40-140	
lexachlorobutadiene	2.89	0.333	mg/kg wet	3.333	87	40-140	
lexachlorocyclopentadiene	2.33	1.67	mg/kg wet	3.333	70	40-140	
lexachloroethane	2.75	0.333	mg/kg wet	3.333	83	40-140	
ndeno(1,2,3-cd)Pyrene	3.64	0.333	mg/kg wet	3.333	109	40-140	
sophorone	2.36	0.333	mg/kg wet	3.333	71	40-140	
laphthalene	2.92	0.333	mg/kg wet	3.333	88	40-140	
litrobenzene	2.87	0.333	mg/kg wet	3.333	86	40-140	
I-Nitrosodimethylamine	2.71	0.333	mg/kg wet	3.333	81	40-140	
-Nitroso-Di-n-Propylamine	2.75	0.333	mg/kg wet	3.333	82	40-140	
N-nitrosodiphenylamine	3.23	0.333	mg/kg wet	3.333	97	40-140	
Pentachlorophenol	3.72	1.67	mg/kg wet	3.333	112	30-130	
•							

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Quality

Dependability

Fax: 401-461-4486 ◆ Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

Batch CF12724 - 3546									
Phenol	2.75	0.333	mg/kg wet	3.333	83	30-130			
Pyrene	3.77	0.333	mg/kg wet	3.333	113	40-140			
Pyridine	2.46	1.67	mg/kg wet	3.333	74	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.57		mg/kg wet	3.333	<i>77</i>	30-130			
Surrogate: 2,4,6-Tribromophenol	4.36		mg/kg wet	5.000	87	30-130			
Surrogate: 2-Chlorophenol-d4	3.72		mg/kg wet	5.000	74	30-130			
Surrogate: 2-Fluorobiphenyl	2.67		mg/kg wet	3.333	80	30-130			
Surrogate: 2-Fluorophenol	3.37		mg/kg wet	5.000	67	30-130			
Surrogate: Nitrobenzene-d5	2.58		mg/kg wet	3.333	78	30-130			
Surrogate: Phenol-d6	3.70		mg/kg wet	5.000	74	30-130			
Surrogate: p-Terphenyl-d14	2.77		mg/kg wet	3.333	83	30-130			
.CS Dup									
,1-Biphenyl	2.83	0.333	mg/kg wet	3.333	85	40-140	6	30	
,2,4-Trichlorobenzene	2.72	0.333	mg/kg wet	3.333	82	40-140	2	30	
,2-Dichlorobenzene	2.75	0.333	mg/kg wet	3.333	83	40-140	3	30	
,3-Dichlorobenzene	2.72	0.333	mg/kg wet	3.333	82	40-140	3	30	
,4-Dichlorobenzene	2.79	0.333	mg/kg wet	3.333	84	40-140	0.7	30	
,3,4,6-Tetrachlorophenol	3.06	1.67	mg/kg wet	3.333	92	30-130	7	30	
,4,5-Trichlorophenol	3.06	0.333	mg/kg wet	3.333	92	30-130	6	30	
,4,6-Trichlorophenol	2.98	0.333	mg/kg wet	3.333	89	30-130	9	30	
,4-Dichlorophenol	2.96	0.333	mg/kg wet	3.333	89	30-130	7	30	
,4-Dimethylphenol	2.86	0.333	mg/kg wet	3.333	86	30-130	5	30	
,4-Dinitrophenol	2.92	1.67	mg/kg wet	3.333	88	30-130	10	30	
,4-Dinitrotoluene	3.18	0.333	mg/kg wet	3.333	95	40-140	7	30	
,6-Dinitrotoluene	3.12	0.333	mg/kg wet	3.333	94	40-140	5	30	
-Chloronaphthalene	2.46	0.333	mg/kg wet	3.333	74	40-140	5	30	
-Chlorophenol	2.74	0.333	mg/kg wet	3.333	82	30-130	7	30	
-Methylnaphthalene	2.78	0.333	mg/kg wet	3.333	84	40-140	10	30	
-Methylphenol	2.83	0.333	mg/kg wet	3.333	85	30-130	8	30	
-Nitroaniline	3.03	0.333	mg/kg wet	3.333	91	40-140	6	30	
-Nitrophenol	2.83	0.333	mg/kg wet	3.333	85	30-130	6	30	
3,3´-Dichlorobenzidine	1.86	0.667	mg/kg wet	2.400	78	40-140	0.8	30	
+4-Methylphenol	5.56	0.667	mg/kg wet	6.667	83	30-130	5	30	
-Nitroaniline	2.92	0.333	mg/kg wet	3.333	88	40-140	8	30	
,6-Dinitro-2-Methylphenol	3.15	1.67	mg/kg wet	3.333	94	30-130	5	30	
-Bromophenyl-phenylether	3.08	0.333	mg/kg wet	3.333	92	40-140	2	30	
-Chloro-3-Methylphenol	2.98	0.333	mg/kg wet	3.333	89	30-130	9	30	
-Chloroaniline	2.33	0.667	mg/kg wet	3.333	70	40-140	9	30	
-Chloro-phenyl-phenyl ether	2.92	0.333	mg/kg wet	3.333	87	40-140	7	30	
-Nitroaniline	3.10	0.333	mg/kg wet	3.333	93	40-140	4	30	
-Nitrophenol	2.94	1.67	mg/kg wet	3.333	88	30-130	8	30	
cenaphthene	3.40	0.333	mg/kg wet	3.333	102	40-140	6	30	
.cenaphthylene	2.74	0.333	mg/kg wet	3.333	82	40-140	7	30	
cetophenone	2.88	0.667	mg/kg wet	3.333	86	40-140	7	30	
niline	2.22	0.667	mg/kg wet	3.333	67	40-140	8	30	



185 Frances Avenue, Cranston, RI 02910-2211

BAL Laboratory

The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

8270C Semi-Volatile Organic Compounds

Batch CF12724 - 3546									
Anthracene	3.56	0.333	mg/kg wet	3.333	107	40-140	3	30	
Azobenzene	2.86	0.333	mg/kg wet	3.333	86	40-140	2	30	
Benzo(a)anthracene	3.74	0.333	mg/kg wet	3.333	112	40-140	1	30	
Benzo(a)pyrene	3.41	0.167	mg/kg wet	3.333	102	40-140	5	30	
Benzo(b)fluoranthene	3.54	0.333	mg/kg wet	3.333	106	40-140	3	30	
Benzo(g,h,i)perylene	3.48	0.333	mg/kg wet	3.333	104	40-140	2	30	
Benzo(k)fluoranthene	3.38	0.333	mg/kg wet	3.333	101	40-140	2	30	
Benzoic Acid	2.61	1.67	mg/kg wet	3.333	78	40-140	8	30	
enzyl Alcohol	2.76	0.333	mg/kg wet	3.333	83	40-140	5	30	
is(2-Chloroethoxy)methane	2.86	0.333	mg/kg wet	3.333	86	40-140	3	30	
is(2-Chloroethyl)ether	2.68	0.333	mg/kg wet	3.333	80	40-140	7	30	
is(2-chloroisopropyl)Ether	2.88	0.333	mg/kg wet	3.333	86	40-140	3	30	
is(2-Ethylhexyl)phthalate	3.22	0.333	mg/kg wet	3.333	97	40-140	0.3	30	
utylbenzylphthalate	3.13	0.333	mg/kg wet	3.333	94	40-140	0.6	30	
arbazole	3.23	0.333	mg/kg wet	3.333	97	40-140	2	30	
hrysene	3.73	0.167	mg/kg wet	3.333	112	40-140	3	30	
ibenzo(a,h)Anthracene	3.65	0.167	mg/kg wet	3.333	110	40-140	2	30	
ibenzofuran	2.85	0.333	mg/kg wet	3.333	86	40-140	7	30	
iethylphthalate	3.07	0.333	mg/kg wet	3.333	92	40-140	4	30	
imethylphthalate	3.05	0.333	mg/kg wet	3.333	92	40-140	5	30	
i-n-butylphthalate	3.08	0.333	mg/kg wet	3.333	92	40-140	1	30	
i-n-octylphthalate	3.20	0.333	mg/kg wet	3.333	96	40-140	2	30	
luoranthene	3.12	0.333	mg/kg wet	3.333	94	40-140	4	30	
uorene	3.45	0.333	mg/kg wet	3.333	103	40-140	7	30	
exachlorobenzene	3.15	0.167	mg/kg wet	3.333	94	40-140	0.4	30	
exachlorobutadiene	2.74	0.333	mg/kg wet	3.333	82	40-140	6	30	
exachlorocyclopentadiene	2.21	1.67	mg/kg wet	3.333	66	40-140	5	30	
exachloroethane	2.77	0.333	mg/kg wet	3.333	83	40-140	0.7	30	
ndeno(1,2,3-cd)Pyrene	3.60	0.333	mg/kg wet	3.333	108	40-140	1	30	
sophorone	2.19	0.333	mg/kg wet	3.333	66	40-140	7	30	
aphthalene	2.75	0.333	mg/kg wet	3.333	82	40-140	6	30	
litrobenzene	2.83	0.333	mg/kg wet	3.333	85	40-140	2	30	
I-Nitrosodimethylamine	2.71	0.333	mg/kg wet	3.333	81	40-140	0.2	30	
-Nitroso-Di-n-Propylamine	2.57	0.333	mg/kg wet	3.333	77	40-140	7	30	
l-nitrosodiphenylamine	3.16	0.333	mg/kg wet	3.333	95	40-140	2	30	
entachlorophenol	3.50	1.67	mg/kg wet	3.333	105	30-130	6	30	
henanthrene	3.52	0.333	mg/kg wet	3.333	106	40-140	3	30	
rhenol	2.54	0.333	mg/kg wet	3.333	76	30-130	8	30	
yrene	3.74	0.333	mg/kg wet	3.333	112	40-140	0.8	30	
yridine	2.29	1.67	mg/kg wet	3.333	69	40-140	7	30	
	2.43	2.07	mg/kg wet	3.333	73	30-130	,	55	
iurrogate: 1,2-Dichlorobenzene-d4	4.18		mg/kg wet	5.000	84	30-130			
Surrogate: 2,4,6-Tribromophenol	3.40		mg/kg wet	5.000	68	30-130			
Surrogate: 2-Chlorophenol-d4	2.51		mg/kg wet	3.333	75	30-130			
Surrogate: 2-Fluorobiphenyl	3.24		mg/kg wet	5.000	<i>65</i>	30-130			
Gurrogate: 2-Fluorophenol Gurrogate: Nitrobenzene-d5	2.37		mg/kg wet	3.333	71	30-130			

Tel: 401-461-7181

Quality

Dependability

Fax: 401-461-4486

Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS Laboratory Work Order: 1106301

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
	8	3270C Semi-	Volatile Orga	anic Com	pounds					
Batch CF12724 - 3546										
Surrogate: Phenol-d6	3.33		mg/kg wet	5.000		67	30-130			
Surrogate: p-Terphenyl-d14	2.69		mg/kg wet	3.333		81	30-130			
		Cl	lassical Chen	nistry						
Batch CF13005 - TCN Prep										
Blank										
Total Cyanide	ND	1.00	mg/kg wet							
LCS										
Total Cyanide	5.13	1.00	mg/kg wet	5.015		102	90-110			
LCS										
Total Cyanide	20.2	1.00	mg/kg wet	20.06		101	90-110			
LCS Dup										
Total Cyanide	19.7	1.00	mg/kg wet	20.06		98	90-110	2	20	
Reference										
Total Cyanide	26.4	1.99	mg/kg wet	26.60		99	69-136			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI

Client Project ID: SK Cranston ESS Laboratory Work Order: 1106301

Notes and Definitions

U	Analy	te incl	uded	in t	the an	alysis,	but not detected
						_	

PT Pentachlorophenol tailing factor > 2.

P Percent difference between primary and confirmation results exceeds 40% (P).

M+ Matrix Spike recovery is above upper control limit (M+).

ICV Initial Calibration Verification recovery is outside of control limit (ICV).

IC Internal Standard(s) outside of criteria. Sample was reanalyzed to confirm (IC).

DDT DDT breakdown > 20%

D+ Relative percent difference for duplicate is outside of criteria (D+).

D Diluted.

B- Blank Spike recovery is below lower control limit (B-).

ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference
MDL Method Detection Limit
MRL Method Reporting Limit
LOD Limit of Detection
LOQ Limit of Quantitation
DL Detection Limit

I/V Initial Volume
F/V Final Volume

Subcontracted analysis; see attached report

1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.

Range result excludes concentrations of target analytes eluting in that range.
 Range result excludes the concentration of the C9-C10 aromatic range.

Avg Results reported as a mathematical average.

NR No Recovery

[CALC] Calculated Analyte

Service



The Microbiology Division of Thielsch Engineering, Inc.

ESS Laboratory Work Order: 1106301



CERTIFICATE OF ANALYSIS

Client Name: Woodard & Curran - RI Client Project ID: SK Cranston

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/out_state.pdf

Maine Potable and Non Potable Water: RI0002 http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non PotableWater, Solid and Hazardous Waste: 2424 http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301 http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002 http://www.nj.gov/dep/oqa/certlabs.htm

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: Woodard & Cur	ran	ESS Project ID:	<u>11060301</u>
Client Project ID:		Date Project Due:	<u>7/1/11</u>
Shipped/Delivered Via:	<u>Client</u>	Days For Project:	5 Day

I

tems to be checked upon receipt:								
1. Air Bill Manifest Present? *No Air No.:	10. Are the samples properly preserved: Yes 11. Proper sample containers used? Yes							
2. Were Custody Seals Present?	12. Any air bubbles in the VOA vials?							
3. Were Custody Seals Intact?	13. Holding times exceeded? No							
4. Is Radiation count < 100 CPM? Yes	14. Sufficient sample volumes? Yes							
5. Is a cooler present? Yes	15. Any Subcontracting needed? No							
Cooler Temp: 2.8	16. Are ESS labels on correct containers? Yes No							
Iced With: Icepacks	17. Were samples received intact? Yes No							
6. Was COC included with samples? Yes	ESS Sample IDs:							
7. Was COC signed and dated by client? Yes	Sub Lab:							
8. Does the COC match the sample Yes	Analysis:							
9. Is COC complete and correct? Yes	TAT:							
18. Was there need to call project manager to discussion of the control of the co	s status? If yes, please explain.							
Who was called?:	By whom?							
Sample Number Properly Preserved Contai	ner Type # of Containers Preservative							
1 Yes 40 ml 1 Yes 40 ml 1 Yes 8 oz S Completed By: Date/Time Date/Time	soil Jar $6/24/1$							

ESS Laboratory	oratory	CHAIN	OF CUST	STODY	λ	Pageo	of
Division of Thielsc. 185 Frances Avenu	W -	Turn Time V Standard Other If faster than 5 days, prior approval by laboratory is required # State where samples were collected from:	Other ratory is required #	Reporting Limits	g Limits)とし	ESS LAB PROJECT	CT ID
Tel. (401) 461-7181 F www.esslaboratory.com	31 Fax (401) 461-4486 .com	MA (RIN) CT NH NJ NY ME Is this project for any of the following: MA-MCP Navy USACE	E Other	Electronic Deliv Format: Excel	Electronic Deliverably Format: Excel	Yes No PDF Other	<u>6</u> 15
		Project # Project Name (20 Char or less)			Write Required Analysis	Analysis	
Contact Person	Don revi	Address 95 (20, 54		(1794) 170-4°			
	State	Zip PO#	ntainer	507 1400 1400 1400			-
Telephone # 401 - 273	13 1007 Fax#	Email Address 1 Dorn D. Darlock Lewis Centre	oD Jo	جالا ما _ر خالاخ خالاخ	s s		
ESS LAB Date Sample #	1	Sample Identification (20 Char. or less)	Pres Code Number Type of	5199 2199 209 209	19T		
10	文 2006	24 5p-3/4 Loam-1	9 8 2	XXXX	×		
10	\$ * *	50-3/4 Loam-1	643		×		
		_					
		en languarie de la Marianne de Arrico, de Arrico, de Arrico, de Languarie de Langua					
نة	-Glass S-Sterile V-VO	l SD-Solid D-Sludge WW-Waste Water	GW-Ground Water SW-Surface Water DW-Drinking Water	SW-Surface Water	DW-Drinking Wate	er O-Oil W-Wipes	F-Filters
Cooler Present	Yes No Internal Use Only	Preservation Code	1- NR 2- HC1, 3- H2O3, 4- HNO3, 5- NaOH, 6- McOH, 7- Asorbic Acid, 8- ZnAct, 9-	5- NaOH, 6- McOl	H, 7- Asorbic Acid, 8	8- ZnAct, 9- VI	
. 17	Yes No NA: [] Pickup	Sampled by: (, Rose					
Cooler Temp	[] Technicians	Comments: Necse run las	level	ust ment	MUST MENT RIDEC &	<i>\</i>	
Relinduisted by: Signature)	Date/Time Received	by: (Sighature) Dath Time Relinquish	Relinquished by: (Signature)	Date/Time 	Received by: (Signature)	nture) Date/Time	Time
Kalinduished by: (Signature)	ne) ' Date/Time Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time 	Received by: (Signature)	sture) Date/Time	Time
*By circling MA-MCP, cli. in accordance with MAD.	*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A	Please fax all changes to Chain of Custody in writing.	ody in writing.		1 (White) Lab Copy	Copy 2 (Yellow) Client Receipt	it Receipt 101981114 A



APPENDIX E: DATA VALIDATION SUMMARIES

W&C Project No.:	219303.29			SDG No.:	1106094
Project:	Safety-Kleen	Cranston		Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:				Date Collected:	
	ESS Laborato	ory, Inc.			6/8/2011
Date Data Evaluation	9/22/2011			Date Analyzed:	6/9/2011
Completed:					
Sample IDs:	SW-1, SW-2,	SW-3, SW-9			
QC Parameter	All in	Non-Compliant	Flag	Action/ Notes	Associated Samples
	Spec.?	Results			
Holding Times	Yes	No	No		
Detection Limits	No	No	No	DLs above PAL of	SW-1
				10 ppm, but sample	
				located in excavation	
				area where additional	
				excavation required.	
Blanks					
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provided			Dedicated sampling	
	Francisco			equipment	
Other QC	I	<u> </u>		equipment	
Initial Calibration	Not				
	evaluated				
Continuing Calibration	Not				
	evaluated				
Surrogate Recoveries	No	No	No	Surrogate diluted out	SW-1
Surrogute rices veries	1.0		110	of sample due to	Z 1
				elevated detections of	
				Aroclor 1248; no	
				action	
				action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike	No	Recoveries of Arochlor	No	MS/MSDs analyzed	MS-SW-8, MSD-SW-8
Duplicates (SW-15; SW-8)		1016 and 1260 were		with SDG 1106125;	(1106125-07)
_		non-detect due to		No action since	
		dilutions		recoveries were	
				diluted due to	
				elevated detections of	
				Arochlor 1248	
Field Duplicates	Yes	No	No	Field duplicates	SW-15 RPD 20%; SW-8
				analyzed with SDG	RPD 27%; SW-19 RPD
				1106124 and SDG	100% (all ND)
				1106125; no action	100/0 (uii 11D)
Summary		<u> </u>		1100125, no action	
Validity of Data	Yes	None	None	None	All

SW-15	DU	P-SW-15 Aroclor		RPD (QC limit = 50%)
	1.63	2	1248	20%
SW-8				
	1920	2520	1260	27%

W&C Project No.:	219303.29			SDG No.:	1106095
Project:	Safety-Klee	en Cranston		Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:				Date Collected:	
	ESS Labora	atory, Inc.			6/8/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	6/10/11, 6/13/11
Completed:					
Sample IDs:		-5, SW-6, SW-7, VB-1, VB-2	2, VB-3, VB-	-4, VB-5, VB-6, VB-7, V	VB-8, VB-9, VB-10, VB-11,
	VB-12				
QC Parameter	All in	Non-Compliant	Flag	Action/ Notes	Associated Samples
	Spec.?	Results			
Holding Times	Yes	No	No	No action	
Detection Limits	Yes	No	No	No action	
Blanks					
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provide	ed		Dedicated sampling	
				equipment	
Other QC				-	
Initial Calibration	Not				
	evaluated				
Continuing Calibration	Not				
	evaluated				
Surrogate Recoveries	No	No	No	Surrogate diluted out	SW-4, VB-2
				of sample due to	
				elevated detection of	
				Aroclor 1248; no	
				action	
G , D	N	NT.	N	g .	CWI C
Surrogate Recoveries	No	No	No	Surrogate recovery	SW-6
				below lower control	
C	No	NI -	NT-	limit	VB-7
Surrogate Recoveries	NO	No	No	Surrogate recovery	VB-/
				above upper control	
I CG D. II	37	N. T.	N.T.	limit	
LCS Results	Yes	No CA 11	No	No action	MC CW O MCD CW O
Matrix Spikes/Matrix Spike	No	Recoveries of Arochlor	No	-	MS-SW-8, MSD-SW-8
Duplicates (SW-15; SW-8)		1016 and 1260 were		with SDG 11625; No	(1106125-07)
		non-detect due to		action since	
		dilutions		recoveries were	
				diluted due to	
				elevated detections of	
P' 11 D - 1' '	37	N.	NY.	Arochlor 1248	CW 15 DDD 2007 CW C
Field Duplicates	Yes	No	No	Field duplicates	SW-15 RPD 20%; SW-8
				analyzed with SDG	RPD 27%; SW-19 RPD
				1106124 and SDG	100% (all ND)
				1106125; no action	
Summary	37	lar I	N.T.	la r	A 11
Validity of Data	Yes	None	None	None	All

SW-15	DU	P-SW-15 Aroclor		RPD (QC limit = 50%)
	1.63	2	1248	20%
SW-8				
	1920	2520	1260	27%

W&C Project No.:	219303.29			SDG No.:	1106124
Project:	Safety-Kleen	Cranston		Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:				Date Collected:	
	ESS Laborato	ory, Inc.			6/9/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	6/11/11, 6/13/11
Completed:					
Sample IDs:	SW-18, SW-1	19, SW-12, DUP-SW-19, S	W-23, SW-2	24	
QC Parameter	All in	Non-Compliant	Flag	Action/ Notes	Associated Samples
	Spec.?	Results			F
Holding Times	Yes	No	No	No action	
Detection Limits	yes	No	No	No action	
Blanks	•			•	
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provided			Dedicated sampling	
	_			equipment	
Other QC					
Initial Calibration	Not				
	evaluated				
Continuing Calibration	Not				
	evaluated				
Surrogate Recoveries	Yes	No	No	No action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike	No	Recoveries of Arochlor	No	MS/MSDs analyzed	MS-SW-8, MSD-SW-8
Duplicates (SW-15; SW-8)		1016 and 1260 were		with SDG 11625; No	(1106125-07)
		non-detect due to		action since	
		dilutions		recoveries were	
				diluted due to	
				elevated detections of	
				Arochlor 1248	
Field Duplicates	Yes	No	No	No action	SW-19 RPD 100% (all ND)
Summary					1
Validity of Data	Yes	None	None	None	All

SW-19 DUP-SW-19 Aroclor

RPD (QC limit = 50%) #DIV/0!

#DIV/0!

W&C Project No.:	219303.29			SDG No.:	1106125
Project:	Safety-Kleen Cranston			Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:				Date Collected:	
	ESS Laborato	ory, Inc.			6/9/2011
Date Data Evaluation	9/23/2011	<i>y</i> ,		Date Analyzed:	6/13/11, 6/14/2011
Completed:				,	,
Sample IDs:	VB-16, VB-1	7. SW-15. SW-17. DUP-S	W-15, SW-1	6. SW-8. DUP-SW-8. S	W-13, SW-14, VB-13, VB-
F		W-20, SW-21, SW-22	,	.,,	, , , , , , , , , , , , , , , , , , , ,
QC Parameter	All in	Non-Compliant	Flag	Action/ Notes	Associated Samples
	Spec.?	Results	8		
Holding Times	Yes	No	No	No action	
Detection Limits	No	No	No	DLs above PAL of	VB-16, VB-17, SW-8, DUP-
Beteetion Emilies	110	110	110	10 ppm, but sample	SW-8, SW-14
				located in excavation	5 1 0, 5 1 1 1
				area where additional	
				excavation required.	
Blanks					
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provided		NO	Dedicated sampling	
Equipment Brank	Not provided				
0.1 0.0				equipment	
Other QC					•
Initial Calibration	Not				
	evaluated				
Continuing Calibration	Not				
	evaluated				
Surrogate Recoveries	No	No	No	Surrogate diluted out	VB-16, VB-17, SW-8, DUP-
				of sample due to	SW-8, SW-14
				elevated detection of	
				Aroclor 1248; no	
				action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike	No	Recoveries of Arochlor	No		MS-SW-8, MSD-SW-8
Duplicates (SW-15; SW-8)	1.0	1016 and 1260 were	110	with SDG 11625; No	
Bupileates (5 W 13, 5 W 6)		non-detect due to		action since	(1100125 07)
		dilutions		recoveries were	
		unutions		diluted due to	
				elevated detections of	
El-14 Deviller	V	NT-	NT-	Arochlor 1248	CW 15 DDD 200/ CW 0
Field Duplicates	Yes	No	No	No action	SW-15 RPD 20%; SW-8 RPD 27%
Summary		· · · · · · · · · · · · · · · · · · ·		•	
Validity of Data	Yes	None	None	None	All

SW-15	DU	P-SW-15 Aroclor		RPD (QC limit = 50%)
	1.63	2	1248	20%
SW-8				
	1920	2520	1260	27%

W&C Project No.:	219303.29			SDG No.:	1106132
Project:	Safety-Kleen	Cranston		Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:	ESS Laborate	ory, Inc.		Date Collected:	6/9/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	6/16/2011
Completed:					
Sample IDs:	SW-10, SW-	11, VB-18, VB-19, VB-20,	VB-21, VB-	22, VB-23, VB-24	
QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	No	No	No action	
Detection Limits	Yes	No	No	No action	
Blanks					
Method Blanks	Yes	No	None	No action	
Equipment Blank	Not provided			Dedicated sampling equipment	
Other QC	•	•			
Initial Calibration	Not evaluated				
Continuing Calibration	Not evaluated				
Surrogate Recoveries	Yes	No	No	No action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike Duplicates (SW-15; SW-8) Field Duplicates	No Yes	Recoveries of Arochlor 1016 and 1260 were non-detect due to dilutions	No	MS/MSDs analyzed with SDG 11625; No action since recoveries were diluted due to elevated detections of Arochlor 1248 Field duplicates	SW-15 RPD 20%; SW-8
Summary				analyzed with SDG 1106124 and SDG 1106125; no action	RPD 27%; SW-19 RPD 100% (all ND)
Validity of Data	Yes	None	None	None	All

W&C Project No.:	219303.29			SDG No.:	1106217
Project:	Safety-Kleen Cranston			Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:	ESS Laborato	ory, Inc.		Date Collected:	6/17/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	6/21/11, 6/22/11
Completed:					
Sample IDs:	SW-25, SW-2	26, SW-27, SW-28, SW	-29, VB-25, VE	3-26, VB-27	
QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	No	No	No action	
Detection Limits	No	No	No	DLs above PAL of	SW-26
				10 ppm, but sample	
				located in excavation	
				area where additional	
				excavation required.	
				1	
Blanks					
Method Blanks	Yes	No	None	No action	
Equipment Blank	Not provided			Dedicated sampling	
				equipment	
Other QC					
Initial Calibration	Not				
	evaluated				
Continuing Calibration	Not				
	evaluated				
Surrogate Recoveries	No	No	No		SW-25, SW-26, SW-28,
				of sample due to	SW-29
				elevated detection of	
				Aroclor	
				1248/Aroclor 1254;	
				no action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike	Yes	No	No	MS/MSDs analyzed	MS-SW-30, MSD-SW-30
Duplicates (SW-15; SW-8)				with SDG 1106241;	(1106241-01)
2 15, 2 3)				No action	
Field Duplicates	Yes	No	No	Field duplicates	SW-30 RPD 100% (all ND)
				analyzed with SDG	
				1106241; no action	
Summary			· ·		<u> </u>
Validity of Data	Yes	None	None	None	All

RPD (QC limit = 50%)

W&C Project No.:	219303.29			SDG No.:	1106241
Project:	Safety-Kleen	Cranston		Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:				Date Collected:	
	ESS Laborate	ory, Inc.			6/20/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	6/23/2011
Completed:					
Sample IDs:	SW-20, DUP	-SW-30, SW-31, VB-28	8, SW-32, VB-1	6B, VB-17B	
QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	No	No	No action	
Detection Limits	Yes	No	No	No action	
Blanks			-		
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provided			Dedicated sampling	
				equipment	
Other QC					
Initial Calibration	Not				
	evaluated				
Continuing Calibration	Not				
	evaluated				
Surrogate Recoveries	Yes	No	No	No action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike	Yes	No	No	No action	MS-SW-30, MSD-SW-30
Duplicates (SW-15; SW-8)					(1106241-01)
Field Duplicates	Yes	No	No	No action	SW-30 RPD 100% (all ND)
Summary					
Validity of Data	Yes	None	None	None	All

RPD (QC limit = 50%)

SW-30 DUP-SW-30 Aroclor

W&C Project No.:	219303.29			SDG No.:	1106263
Project:	Safety-Kleen Cranston			Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:				Date Collected:	
	ESS Laborat	ory, Inc.			6/21/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	6/24/11, 6/25/11, 6/27/11,
Completed:					6/28/11, 6/29/11
Sample IDs:					7-37, SW-38, SW-39, SW-
					W-43, SW-44, SW-45, SW-
	46, SW-47, S	SW-48, SW-49, DUP-SV	W-49, SW-50, V	B-38, VB-39, VB-40, V	⁷ B-41
QC Parameter	All in	Non-Compliant	Flag	Action/ Notes	Associated Samples
	Spec.?	Results			_
Holding Times	Yes	No	No	No action	
Detection Limits	No	No	No	No action	SW-45
Blanks					
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provided	1		Dedicated sampling	
				equipment	
Other QC					
Initial Calibration	Not				
	evaluated				
Continuing Calibration	Not				
	evaluated				
Surrogate Recoveries	No	No	No	Surrogate diluted out	SW-45
				of sample due to	
				elevated detection of	
				Aroclor 1248; no	
				action	
Surrogate Recoveries	No	No	No	Surrogate recovery	DUP-SW-49
				below lower control	
				limit; no action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike	Yes	No	No	No action	MS-VB-2B, MSD-VB-2B
Duplicates (VB-2B, SW-49)					(1106263-20); MS-SW-49,
					MSD-SW-29 (1106263-28)
Field Duplicates	Yes	No	No	No action	VB-2B RPD 100% (all
					ND); SW-49 RPD 2%
Summary			1	1	
Validity of Data	Yes	None	None	None	All

RPD (QC limit = 50%)

SW-49 DUP-SW-49 Aroclor 2.23 2.18

1254

-2%

W&C Project No.:	219303.29			SDG No.:	1107095
Project:	Safety-Kleen	Cranston		Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:	ESS Laborate	ory, Inc.		Date Collected:	7/12/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	7/13/11, 7/14/11
Completed:					
Sample IDs:	SW-46A, SW VB-46, DUP		, SW-52, SW-5	53, SW-54, SW-55, VB-	42, VB-43, VB-44, VB-45,
QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	No	No	No action	
Detection Limits	Yes	No	No	No action	
Blanks					
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provided			Dedicated sampling equipment	
Other QC	•			L. J. P	•
Initial Calibration	Not evaluated				
Continuing Calibration	Not evaluated				
Surrogate Recoveries	Yes	No	No	No action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike Duplicates (VB-46)	Yes	No	No	No action	MS-VB-46, MD-VB-462B (1107095-13)
Field Duplicates (VB-46)	Yes	No	No	No action	VB-46 RPD 13% and 15% for Aroclor 1248 and 1254, respectively
Summary	· · · · ·	1			1
Validity of Data	Yes	None	None	None	All

RPD (QC limit =

VB-46 DUP-VB-46 Aroclor 50%) 10.2 11.6 1248 13% 1.44 1.67 1254 15%

W&C Project No.:	219303.29			SDG No.:	1107159
Project:	Safety-Kleen	Cranston		Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:	ESS Laborate	ory, Inc.		Date Collected:	7/15/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	7/18/11, 7/19/11, 7/22/11
Completed:					
Sample IDs:	SW-56, SW-5		W-25A, SW-41	A, SW-32A, VB-47, VB	3-48, VB-49, VB-50
QC Parameter	All in	Non-Compliant	Flag	Action/ Notes	Associated Samples
	Spec.?	Results			
Holding Times	Yes	No	No	No action	
Detection Limits	Yes	No	No	No action	
Blanks					
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provided			Dedicated sampling equipment	
Other QC	•	•	•		
Initial Calibration	Not evaluated				
Continuing Calibration	Not evaluated				
Surrogate Recoveries	No	No	No	Surrogate diluted out of sample due to elevated detections of Aroclor 1248, 1254; no action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike Duplicates (VB-46)	Yes	No	No	MS/MSD analyzed with SDG 1107095; no action	MS-VB-46, MD-VB-462B (1107095-13)
Field Duplicates (VB-46)	Yes	No	No	Field duplicate analyzed with SDG 1107095; no action	VB-46 RPD 13% and 15% for Aroclor 1248 and 1254, respectively
Summary					
Validity of Data	Yes	None	None	None	All

VB-46 DUP-VB-46 Aroclor 50%)
10.2 11.6 1248 13%
1.44 1.67 1254 15%

W&C Project No.:	219303.29			SDG No.:	1107259
Project:	Safety-Klee	n Cranston		Analysis:	PCBs
Medium:	Soil			Analytical Method:	8082 with 3540 extraction
Laboratory:	ESS Labora	ntory, Inc.		Date Collected:	7/26/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	7/29/11, 8/01/11
Completed:					
Sample IDs:	SW-59, VB	i-51, VB-42A, VB-43A, V	/B-44A, VB-46	5A	
QC Parameter	All in Spec.?	Non-Compliant Results	Flag	Action/ Notes	Associated Samples
Holding Times	Yes	No	No	No action	
Detection Limits	Yes	No	No	No action	
Blanks					
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provide	ed		Dedicated sampling equipment	
Other QC				equipment	l
Initial Calibration	Not evaluated				
Continuing Calibration	Not evaluated				
Surrogate Recoveries	Yes	No	No	No action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike Duplicates (VB-46)	Yes	No	No	MS/MSD analyzed with SDG 1107095; no action	MS-VB-46, MD-VB-462B (1107095-13)
Field Duplicates (VB-46)	Yes	No	No	Field duplicate analyzed with SDG 1107095; no action	VB-46 RPD 13% and 15% for Aroclor 1248 and 1254, respectively
Summary	T	1		T	T
Validity of Data	Yes	None	None	None	All

RPD (QC limit =

VB-46 DUP-VB-46 Aroclor 50%) 10.2 11.6 1248 13% 1.44 1.67 1254 15%

Project:	Safety-Kleen	Cranston		Analysis:	PCBs
Medium:	Soil	·		Analytical Method:	8082 with 3540 extraction
Laboratory:				Date Collected:	
	ESS Laborate	ory, Inc.			7/27/2011
Date Data Evaluation	9/23/2011			Date Analyzed:	7/29/11, 7/30/11
Completed:					
Sample IDs:	VB-52, VB-5	53, VB-54, VB-55, SW-	56A, SW-57A		
QC Parameter	All in	Non-Compliant	Flag	Action/ Notes	Associated Samples
	Spec.?	Results			•
Holding Times	Yes	No	No	No action	
Detection Limits	Yes	No	No	No action	
Blanks					
Method Blanks	Yes	No	No	No action	
Equipment Blank	Not provided			Dedicated sampling	
				equipment	
Other QC					
Initial Calibration	Not				
	evaluated				
Continuing Calibration	Not				
	evaluated				
Surrogate Recoveries	Yes	No	No	No action	
LCS Results	Yes	No	No	No action	
Matrix Spikes/Matrix Spike	Yes	No	No	MS/MSD analyzed	MS-VB-46, MD-VB-462B
Duplicates (VB-46)				with SDG 1107095;	(1107095-13)
				no action	
Field Duplicates (VB-46)	Yes	No	No	Field duplicate	VB-46 RPD 13% and 15%
				analyzed with SDG	for Aroclor 1248 and 1254,
				1107095; no action	respectively
Summary					
Validity of Data	Yes	None	None	None	All

RPD (QC limit =

107284

SDG No.:

VB-46 DUP-VB-46 Aroclor 50%)
10.2 11.6 1248 13%
1.44 1.67 1254 15%

W&C Project No.:

Project:	Safety-Kleen Cranston Soil			Analysis:	PCBs			
Medium:				Analytical Method:	8082 with 3540 extraction			
Laboratory:								
-	ESS Laborate	ory, Inc.			8/5/2011			
Date Data Evaluation	9/23/2011		Date Analyzed:	8/9/11, 8/10/11				
Completed:								
Sample IDs:	VB-42B, VB-51A, SW-59A, SW-59B							
QC Parameter	All in	Non-Compliant	Flag	Action/ Notes	Associated Samples			
	Spec.?	Results			1			
Holding Times	Yes	No	No	No action				
Detection Limits	Yes	No	No	No action				
Blanks			-					
Method Blanks	Yes	No	No	No action				
Equipment Blank	Not provided			Dedicated sampling				
				equipment				
Other QC								
Initial Calibration	Not							
	evaluated							
Continuing Calibration	Not							
	evaluated							
Surrogate Recoveries	No	No	No	Surrogate recovery	VB-42B			
				above upper control				
				limit				
LCS Results	Yes	No	No	No action				
Matrix Spikes/Matrix Spike	Yes	No	No	MS/MSD analyzed	MS-VB-46, MD-VB-462B			
Duplicates (VB-46)				with SDG 1107095;	(1107095-13)			
				no action				
Field Duplicates (VB-46)	Yes	No	No	Field duplicate	VB-46 RPD 13% and 15%			
				analyzed with SDG	for Aroclor 1248 and 1254,			
				1107095; no action	respectively			
Summary								
Validity of Data	Yes	None	None	None	All			

1108081

SDG No.:

VB-46 DUP-VB-46 Aroclor 50%)
10.2 11.6 1248 13%
1.44 1.67 1254 15%

W&C Project No.:



APPENDIX F: PROUCL OUTPUT DATA

General UCL Statistics for	or Data Sets	with Non-Detects	624216/2006/4266
User Selected Options			
From File C:\Users\jbonn\Desktop\S	ata.wst		
Full Precision OFF		THE REPORT OF THE PARTY OF THE	
Confidence Coefficient 95%			
Number of Bootstrap Operations 2000			
PCBs			
	General Sta	tistics	
Number of Valid Data	55	Number of Detected Data	47
Number of Distinct Detected Data	47	Number of Non-Detect Data	8
		Percent Non-Detects	14.55%
Raw Statistics	Log-transformed Statistics		
Minimum Detected	0.209	Minimum Detected	-1.565
Maximum Detected	10.95	Maximum Detected	2.393
Mean of Detected	2.642	Mean of Detected	0.437
SD of Detected	2.648	SD of Detected	1.113
Minimum Non-Detect	0.206	Minimum Non-Detect	-1.58
Maximum Non-Detect	0.236	Maximum Non-Detect	-1.444
Note: Data have multiple DLs - Use of KM Method is recomm	iended	Number treated as Non-Detect	10
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	45
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	18.18%
obosi vatorio Largest il di Caracteria			
	UCL Statis	stics	
Normal Distribution Test with Detected Values Onl		Lognormal Distribution Test with Detected Values Or	nly
Shapiro Wilk Test Statistic			
5% Shapiro Wilk Critical Value	0.946	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value	0.946
Data not Normal at 5% Significance Level			
Data Not Normal at the Olympian Control		Data appear Lognormal at 5% Significance Level	
	10,000	Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution			
Assuming Normal Distribution DL/2 Substitution Method		Assuming Lognormal Distribution	
DL/2 Substitution Method	2 274	Assuming Lognormal Distribution DL/2 Substitution Method	0.0526
DL/2 Substitution Method Mean	2.274	Assuming Lognormal Distribution DL/2 Substitution Method Mean	
DL/2 Substitution Method Mean SD	2.604	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD	1.393
DL/2 Substitution Method Mean		Assuming Lognormal Distribution DL/2 Substitution Method Mean	0.0526 1.393 4.809
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL	2.604	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL	1.393
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method	2.604 2.862	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method	1.393 4.809
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean	2.604 2.862 1.956	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale	1.393 4.809 0.0863
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean SD	2.604 2.862 1.956 2.981	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale SD in Log Scale	1.393 4.809 0.0863 1.343
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean SD 95% MLE (t) UCL	2.604 2.862 1.956 2.981 2.629	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale SD in Log Scale Mean in Original Scale	1.393 4.809 0.0863 1.343 2.279
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean SD	2.604 2.862 1.956 2.981	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale SD in Log Scale Mean in Original Scale SD in Original Scale	1.393 4.809 0.0863 1.343 2.279 2.6
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean SD 95% MLE (t) UCL	2.604 2.862 1.956 2.981 2.629	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale SD in Log Scale Mean in Original Scale SD in Original Scale	1.393 4.809 0.0863 1.343 2.279 2.6
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean SD 95% MLE (t) UCL	2.604 2.862 1.956 2.981 2.629	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale SD in Log Scale Mean in Original Scale SD in Original Scale 95% t UCL 95% Percentile Bootstrap UCL	1.393 4.809 0.0863 1.343 2.279 2.6 2.860 2.89
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean SD 95% MLE (t) UCL	2.604 2.862 1.956 2.981 2.629	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale SD in Log Scale SD in Original Scale SD in Original Scale SD in Original Scale 95% t UCL 95% Percentile Bootstrap UCL	1.393 4.809 0.0863 1.343 2.273 2.6 2.860 2.81
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean SD 95% MLE (t) UCL	2.604 2.862 1.956 2.981 2.629	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale SD in Log Scale Mean in Original Scale SD in Original Scale 95% t UCL 95% Percentile Bootstrap UCL	1.393 4.809 0.0863 1.343 2.273 2.6 2.866 2.89
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean SD 95% MLE (t) UCL 95% MLE (Tiku) UCL	2.604 2.862 1.956 2.981 2.629 2.624	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale SD in Log Scale Mean in Original Scale SD in Original Scale SD in Original Scale 95% t UCL 95% Percentile Bootstrap UCL 95% H UCL	1.393 4.809 0.0863 1.343 2.279 2.6 2.866 2.89 2.913 4.509
DL/2 Substitution Method Mean SD 95% DL/2 (t) UCL Maximum Likelihood Estimate(MLE) Method Mean SD 95% MLE (t) UCL	2.604 2.862 1.956 2.981 2.629 2.624	Assuming Lognormal Distribution DL/2 Substitution Method Mean SD 95% H-Stat (DL/2) UCL Log ROS Method Mean in Log Scale SD in Log Scale SD in Original Scale SD in Original Scale SD in Original Scale 95% t UCL 95% Percentile Bootstrap UCL	1.393 4.809 0.0863 1.343 2.279 2.6 2.866 2.89 2.913 4.509

nu star	95.61		
A-D Test Statistic	0.596	Nonparametric Statistics	
5% A-D Critical Value	0.777	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.777	Mean	2.28
5% K-S Critical Value	0,133	SD	2.56
Data appear Gamma Distributed at 5% Significance	Level	SE of Mean	0.3
		95% KM (t) UCL	2.87
Assuming Gamma Distribution	95% KM (z) UCL	2.86	
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.87
Minimum	1.0000E-6	. 95% KM (bootstrap t) UCL	2.96
Maximum	10.95	95% KM (BCA) UCL	2.87
Mean	2.258	95% KM (Percentile Bootstrap) UCL	2.88
Median	1.17	95% KM (Chebyshev) UCL	3.8
SD	2.618	97.5% KM (Chebyshev) UCL	4.47
k star	0.281	99% KM (Chebyshev) UCL	5.77
Theta star	8.048		
Nu star	30.86	Potential UCLs to Use	
AppChi2	19.17	95% KM (BCA) UCL	2.87
95% Gamma Approximate UCL (Use when n >= 40)	3.635		
95% Adjusted Gamma UCL (Use when n < 40)	3.682		
ote: DL/2 is not a recommended method.			

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.